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# **Development of LHX MANPRINT Issues**

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Allen Corporation of America

for

Contracting Officer's Representative Ray S. Perez

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U.S. Army

Research Institute for the Behavioral and Social Sciences

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EDGAR M. JOHNSON Technical Director JON W. BLADES COL, IN Commanding

Research accomplished under contract for the Department of the Army

Allen Corporation of America

Technical review by

Judah Katznelson

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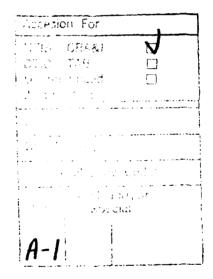
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Light Helicopter Family LHX System Safety Personnel MANPRINT The goal of the Army's Manpower and Personnel Integration (MANPRINT) program is to enhance the field effectiveness of newly deployed weapons by integrating, throughout the materiel acquisition process, the information and actions that affect soldier performance. This includes manpower levels, personnel requirements, training requirements, human factors engineering, system safety, and health hazards. The Manned Systems Group of the Army Research Institute for the Behavioral and Social Sciences (ARI) performs research and development in areas that support the MANPRINT process.

This report documents one step in the Army's first effort to apply MANPRINT in the early stages of a major weapon acquisition. The report describes a process of identifying and analyzing the human factors, health hazard, and training issues associated with the Light Helicopter Family (IHX) up to and including the Full Scale Development Request for Proposal. The manpower, personnel and system safety issues for IHX were investigated under a separate effort and are documented in ARI Working Paper MSG 88-02, IHX MANPRINT Integration. The report also describes an automated data base, the structure and operation of which are generally useful in any material acquisition.





#### DEVELOPMENT OF LHX MANPRINT ISSUES

#### EXECUTIVE SUMMARY

#### Requirement:

To facilitate the Manpower and Personnel Integration (MANPRINT) process in the Light Helicopter Family (IHX) acquisition by identifying and analyzing the status of human factors engineering, health hazard, and training issues relevant to the IHX.

#### Procedure:

The MANPRINT issues associated with the IHX were identified from IHX program documents and analyses. The work was performed within the context of the actual IHX acquisition process and focused on human factors engineering, health hazard, and training issues. (The manpower, personnel and system safety issues for IHX were investigated under a separate effort and are documented in ARI Working Paper MSG 88-02, IHX MANPRINT Integration.) The period of performance coincided with the period of preparation of the Full Scale Development Request for Proposal. The "controls" were embodied in the efforts to consistently and uniformly apply the elements of analysis to the changing stream of relevant real world events. The source or sources of issues were documented, along with the potential impact on system performance. The status of issues was analyzed in terms of proposed solution, risk, and timeliness of solution. An automated data base was developed to support the analysis process.

#### Findings:

Issues were identified in five of the six MANPRINT domains; manpower, personnel, training, human factors engineering, and health hazards. (Other analysts might have categorized some of the health hazard issues as system safety issues. Faced with ambiguity, we elected to include issues in the analysis rather than exclude them. Likewise, issues observed in the manpower and personnel domains were included although they were beyond the main focus of this effort.) The issues are not all equally difficult to solve or equally important to the success of the IHX. In terms of technological risk, issues vary from high to low. The paramount issue is the viability of the concept of single pilot operation of the scout/attack version of the IHX. Other important issues involve the training system, personnel skills, and the reduction of maintenance manpower. Without exception, the major MANPRINT issues covered by this report are being addressed in the IHX system development process.

#### Utilization of Findings:

The report presents a consolidated synopsis of issues in three of the MANPRINT domains pertinent to the LHX acquisition as of late 1986. The information points to areas for action and may assist decision makers in setting priorities and defining the nature of the requisite action.

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#### DEVELOPMENT OF LHX MANPRINT ISSUES

#### OVERVIEW

#### Operational Problem

The Army's initial attempt to incorporate the new Manpower and Personnel Integration (MANPRINT) program (Army Regulation 602-2, in preparation) into the early stages of a major weapon acquisition program occurred with the Light Helicopter Family (IHX). Methods and procedures for integrating the MANPRINT domains and for incorporating MANPRINT into the materiel acquisition process were in the formative stages and as yet were mostly untried and unrefined. One aspect of the problem was the identification and definition of those aspects of the IHX development which might constitute significant MANPRINT issues.

#### Research Objective

The objective of this work was to identify and define IHX MANPRINT issues in the human factors engineering, health hazard, and training domains at a level of specificity and detail suitable for management attention and for the tracking of progress toward solution of those issues throughout subsequent stages of materiel acquisition and system development. The manpower, personnel and system safety issues for IHX were investigated under a separate effort and are documented in ARI Working Paper MSG 88-02.

#### <u>Scope</u>

In terms of the nature and level of issues, the scope of the effort was defined as those issues appropriate for attention at Headquarters, Department of the Army level. In analyzing the status of each issue, its impact on the IHX system, nature of proposed solution, timing, technological risk, type of activity affected, and principal MANPRINT domains were considered. The source material was the unclassified IHX program documentation and the reports of various IHX program analyses available through Fall 1986.

#### Approach

Relevant IHX documentation was reviewed in detail. Explicit and implicit MANPRINT issues, both real and potential, were identified, defined, and condensed into a short statement and catalogued in an automated data base along with a source reference and available information on origin and status. The analysis consisted of adding information about the issue obtained from these documents, adding corroborative sources, and subjectively categorizing the issue along several dimensions based on the relevant information accumulated for each specific issue. Results of the analysis were then applied by U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) to the IHX System MANPRINT Management Plan (SMMP) and the Human Factors Engineering Analysis; they are presented in this report.

#### BACKGROUND

#### Light Helicopter Family (LHX) Description

When developed, the IHX family of light, fast, highly maneuverable aerial vehicles will be capable of conducting nap-of-the-earth operations continuously throughout the entire battlefield against a sophisticated threat which has the capability to use nuclear, biological, and chemical (NBC) and directed energy weapons. The LHX will have an integrated and automated cockpit, worldwide navigation capability, and secure, electromagnetic pulse (EMP) and electromagnetic interference (EMI) hardened avionics. The IHX will be self-deployable to Europe and rapidly transportable by inter-theater tactical air transport. The capabilities of the LHX will expand Army aviation's ability to perform its missions continuously in adverse weather and over all terrain. The capabilities include air-to-air combat, deep attack, continuous day and night operations on an integrated battlefield, more rapid tailoring of units to meet the demands of the fluid battlefield, and increased ability to remain in the battle. The IHX will be fielded in units that have combat, combat support (CS), and combat service support (CSS) missions. The IHX will replace the aging fleets of AH-1, OH-58, and UH-1 helicopters.

Two versions of the IHX are planned: the IHX scout/attack (SCAT) and the IHX utility (IHX-U). The SCAT will be rapidly convertible for various missions through the installation of "mission kits" consisting of preselected equipment essential to the specific mission. Capabilities planned for the SCAT include automatic acquisition of multiple targets, target prioritization, and transmission of target information to other aircraft for attack purposes. The IHX-U capabilities include internal and external cargo transport, tactical team transport, command and control, and an air-to-air combat capability.

#### IHX Mission Capabilities

The IHX will enhance Army capabilities in the following mission areas:

Command and Control  $(C^2)$ : support the  $C^2$  effort by greatly enhancing the commanders' ability to see the battlefield, collect and disseminate information, communicate with all echelons of command, and control combat forces.

Close Combat: improve the Army commanders' capability to maneuver, acquire and destroy targets, and control the battle.

Fire Support: in the field artillery aerial observation (FAAO) role, provide the commander the capability to fire-for-effect with the first round.

Air Defense: add to the total force air defense effort by destroying enemy aircraft with air-to-air weapons. Additional

capabilities include detection and engagement of enemy air movements and rapid repositioning of lightweight or man-portable air defense assets.

Communication: provide secure airborne retransmission of voice and data communications, transport support systems, emplace automated communications in remote areas, and perform secure courier service.

Intelligence and Electronic Warfare (IEW): supplement the commanders' other IEW systems through detection, location, and identification of enemy units by using IHX surveillance devices or by positioning both attended and unattended ground sensor systems.

Combat Service Support (CSS): improve the capacity to rapidly transport and recover small numbers of personnel and light materiel anywhere on the battlefield.

#### LHX Maintenance Concept

The maintenance concept for the IHX is consonant with the provisions anticipated for Army aircraft maintenance in the year 1985 and beyond. Both the maintenance system and the reliability, availability, maintainability, and testability characteristics of the aircraft will be designed to support the future operational requirements of the Army. Although the maintenance force structure supporting Army aviation in the 1990s will remain a three-level system, the IHX maintenance concept operating within that force structure will have only two levels, designated as user-level and depot-level maintenance.

<u>Level 1: User Maintenance</u>. User-level maintenance supports a specific weapon system, including unit maintenance, aviation intermediate maintenance, combat maintenance, and battle damage assessment and repair. This maintenance contributes to aircraft readiness and does not support the supply system.

<u>Level 2: Depot Maintenance</u>. Depot-level maintenance refers to all maintenance performed in support of the supply system including component rebuilding, repair, and calibration.

The IHX maintenance concept is intended to drive the design of the IHX toward optimum maintainability and to reduce maintenance manpower requirements. Modules and replaceable units will be discarded or evacuated, as appropriate. Maximum use will be made of on-board troubleshooting and built-in tests to assess current conditions and detect trends. The IHX will utilize independent, ground-based automatic test equipment (ATE), if required. However, emphasis will be placed on eliminating the need for mainframe ATE in the field. Aircraft design should emphasize maintenance with common tools and utilization of special tools will be minimal. The IHX will incorporate on-board flight data recording, test, and diagnostic equipment to facilitate maintenance and rapid return to operationally ready status.

#### LHX Manpower

The IHX will be designed to reduce the force structure requirement for maintenance personnel. The desired goal is to reduce the complexity and variety of maintenance tasks required to such a degree that all unit level maintenance functions can be performed by no more than three different military occupational specialties (crew chief included). This goal will be accomplished through technological advances and refinements in the manmachine interface. The reduction of manpower requirements will contribute to more cost-effective operations when compared to the aircraft the IHX will replace.

#### <u>Personnel</u>

Personnel issues will be addressed continuously during the development of the IHX and the number of skills and skill levels for aircrew and maintenance personnel are not to exceed those required for current light helicopter fleet operations. Equipment design emphasis will be placed on simplicity and ease of operation. New warrant officer and enlisted military occupational specialties (MOS) to operate, maintain, and support the IHX are to be held to a minimum.

#### Training

The IHX training system will meet all operator, maintainer, and supporter training requirements for both Active and Reserve Component personnel. The training system, to include all devices, courseware, and embedded training capabilities in the aircraft, will be developed, tested, and fielded concurrently with the aircraft. Maintenance manuals will be developed for the appropriate reading grade level and all maintenance publications will be user-validated.

Flight training will be conducted at the U.S. Army Aviation Center (USAAVNC). Students will be tracked into either the SCAT or IHX-U. Early phases of initial entry rotary wing (IERW) training may be conducted in a generic IHX training aircraft. The advanced phase of IERW will be in mission-specific IHX training aircraft. Maintenance test pilot training will be conducted at the U.S. Army Aviation Logistics School following aircraft qualification at USAAVNC. Initial maintenance and support training will be conducted by the appropriate Army schools. All new mission profiles and related tasks generated by the IHX will be incorporated into new and distinct soldier's manuals, job books, soldier's guides, skill qualification tests, aircrew training manuals, Army training evaluation programs, and the annual aviator's written examination. A contractor's training course will provide instructor and key personnel training for initial handoff of operator and maintainer skills to Army instructors.

#### LHX in Army Units

The SCAT will replace the AH-1 and OH-58A/C helicopter in air reconnaissance and attack helicopter units. Beyond the year 2000, the SCAT

version will displace the OH-5BD in attack helicopter units equipped with the AH-64 and in the FAAO role. It is planned that air reconnaissance troops and attack helicopter companies will each have SCAT aircraft.

The LHX-U version will replace the OH-58 observation and UH-1 utility helicopter organic to aviation units at echelons above corps, corps, division, and other organizations that have requirements for command, control, and communication aircraft. This replacement will be on a one-for-one basis.

#### Manpower and Personnel Integration (MANPRINT)

Army Regulation 602-2 describes MANPRINT as a comprehensive management and technical program to improve total system (soldier and equipment) performance by the continuous integration of manpower, personnel, training, human factors engineering, system safety, and health hazard considerations throughout the materiel development and acquisition process. The recent urgent need to resolve the dilemma between the rapidly increasing complexity of military hardware (coupled with an attendant need for trained highskilled soldiers) which has accompanied the current Army Modernization Program and the anticipated finite limits on the number and quality of soldiers who may be available in the 1990s have moved MANPRINT into the forefront of materiel acquisition planning. Thus, while Army units might possess the most sophisticated and theoretically superior equipment, total performance potential might not be realized unless soldier performance is highly effective. In the past, increased capability achieved with advanced technology was often accompanied by increased soldier task complexity. Materiel design was not always guided by a disciplined process that insisted on putting "the soldier-in-the-loop". Moreover, the design process was often built on the unstated assumption that sufficient numbers of skilled soldiers would always be available to operate, maintain, and support the hardware.

#### MANPRINT Integration

The key words in the MANPRINT process are "integration" and "throughout materiel development and acquisition... " new equipment training, development of new institutional training programs, basis of issue plans, qualitative and quantitative personnel requirements information, manpower requirement criteria, and MOS determination have long had their place in the fielding of newly developed Army equipment. System safety assessment, health hazard assessment, human factors engineering, and tables of organization and equipment development are also not new to Army system development. What is entirely new about MANPRINT is the emphasis on integration of these activities. First, the MANPRINT program integrates the activities in the six existing domains of manpower, personnel, training, human factors engineering, system safety, and health hazards. It seeks not only integration among them but has the broader objective of integrating these with relevant design activities in traditional areas of operation, maintenance, logistics, and support. In so doing, the MANPRINT process focuses concern not only on the individual soldier but also on the units which will employ, maintain, and support new materiel (Figure 1).

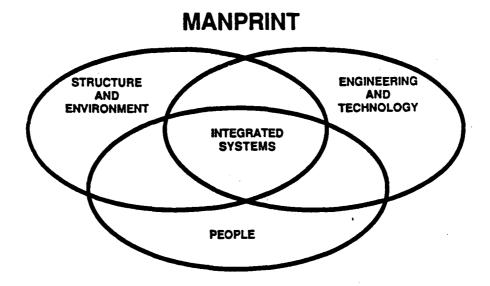


Figure 1. Manpower and Personnel Integration (MANPRINT).

The second new element in the MANPRINT program is the insistence that technical information from the MANPRINT domains should play a prominent role in the decisions which determine the design characteristics of new materiel from concept formulation phase through the deployment phase. Thus, MANPRINT contributes to total system effectiveness through improved: soldier performance, manpower and personnel utilization, and unit effectiveness.

#### DEVELOPING MANPRINT ISSUES

As might be anticipated, the newness of MANPRINT in the materiel acquisition process led to frequent modifications in the approach, scope, and products of this effort. While these modifications, inevitably, helped mold products of the work, they were always aimed at enhancing the utility of those products to the IHX MANPRINT program. Only the final approach used in this task is described here. The approach is depicted in Figure 2.

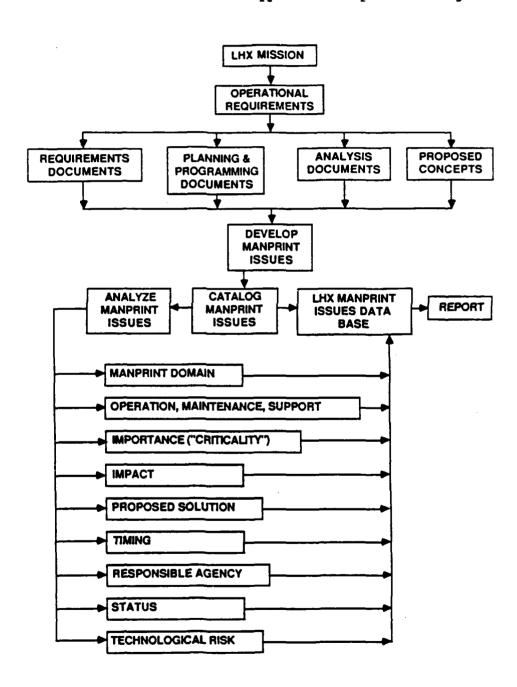


Figure 2. Scheme for developing LHX MANPRINT issues.

#### **Procedure**

Unclassified IHX documentation assembled by ARI was examined for potential relevance to the MANPRINT area. The contractor assisted in identifying and locating appropriate documents. Document acquisition was through ARI. The contractor reproduced relevant documents for review and analysis. Based on subject matter, each document was categorized as a requirement document, a plans/programs document, or an analysis document, entered into an automated data base (fully described in Appendix A of this report) and assigned a unique identification number (IDNO). Within the data base, each document was cataloged by title, author, document location (i.e., ARI LHX file folder number), originating organization, date, media type (to identify non-printed items) status (i.e., draft versus final material), security classification (although set up to designate classified material, in actual use only Unclassified and For Official Use Only (FOUO) documents were cataloged), and document type (i.e., report, briefing, letter, plan, etc.). An analyst examined each cataloged item for timeliness, detail, specificity, new or unique information, and extent of overlap with, or duplication of, documents previously received. Most documents were then given a detailed reading (see references and bibliography). Omission of specific items at this stage was usually based on the existence of more detailed or more recent information in another document, e.g., only the most recent HARDMAN (Hardware versus Manpower) analysis of the IHX was reviewed.

The analyst read the text for explicit and implicit MANPRINT issues. This required the constant exercise of judgement in comparing stated and potential issues against a rather imprecise criterion. Initially, the criterion was, "The issue is of such significance that it should be presented to the Army Systems Acquisition Review Council (ASARC)". A strict interpretation would have led to a few issues stated in terms so broad as to offer little help in dealing with those issues. (The LHX System MANPRINT Management Plan eventually settled on eight "Key Issues".) The criterion used was. "The issue, if unsolved, will seriously impede attainment of a major capability or objective projected for the LHX program." "Seriously impede" could then be evaluated in terms such as technological difficulty, manpower implications, number of personnel likely to be affected, or some other indication of the extent of the potential impact on the overall success of IHX. This led to issues that could be analyzed in useful terms and eliminated the host of specific technical MANPRINT questions that are easily perceived in perusing the characteristics and capabilities desired of the IHX. Thus, the issues addressed in this report are those pertaining to major subsystems or major elements of the LHX program. Nevertheless, in judging whether or not to define and include an issue it was deemed more desirable to include it for visibility rather than have it unexpectedly arise later in IHX development. From the text, the analyst extracted or formulated a succinct issue statement or question. Variants of an issue and discussion or analysis of these might occur in several different sources. Thus, the distillation and analysis of information was an iterative process. The text usually discussed the impact upon the IHX of failure to solve the issue. If it did not, the analyst provided an impact statement. A similar treatment occurred with proposed solutions to an issue, except that analysts formulated proposed solutions only in their areas of expertise. Therefore, not all issues have proposed solutions.

Each issue was categorized according to its significance for a particular type of activity, i.e., operation (0), maintenance (M), or support (S). Each issue also was categorized according to the MANPRINT domain in which it had major impact. Predictably, many issues affected more than one type of activity and more than one MANPRINT domain. Thus, an issue may appear several times in the automated data base. The analyst exercised judgement in making multiple entries of an issue in order to maintain the informational utility of the categorization and precluded having all issues appear in all categories.

To indicate the extent to which solution of an issue seemed of critical importance to overall, multi-mission success of the IHX, a "Criticality Score" was assigned to each issue using the following criteria:

E = Essential - solution of the issue is required for a successful IHX.

H = High - highly important issue. Failure to resolve the issue means major degradation in IHX mission performance.

M = Medium - moderately important issue. Failure to resolve the issue means serious delay in the program, potential inefficiencies of major significance, or minor degradation in mission performance.

L = Low - issues of low (but not zero) importance to the IHX program. Failure to resolve the issue can result in program delay, inefficient operations, or degradation of training, maintenance, or support services.

Although independent assessment of technological risk was beyond the scope of this effort, source documents were scrutinized for risk assessments made by others. Where available, assessments and their source were recorded for specific issues. The agency that was, or should be, responsible for solution of each issue and the event within the material acquisition process by which a solution was needed was ascertained and recorded. Finally, the summary status of issue resolution was determined and recorded as:

- Res. = Resolved meaning that a decision has been made or action taken that answers the question(s) raised by the issue. (Resolution of an issue is entirely separate from the impact of an issue. A resolved issue may have profound consequences for maintainers, operators, or support personnel or for the several MANPRINT domains.)
- Pend. = Pending meaning that an Army agency acknowledges "ownership" of the issue and that it is, or will be, addressed in a timely manner.
- Unres. = Unresolved denotes that a path to the solution has not been documented or that ownership is not clearly established.
- Unk. = Unknown denotes that there was no information upon which to judge the status of the issue. This category applied mostly to issues raised by other than the "owner" of the issue.

As each issue was analyzed, the information described above was entered into the automated data base, together with a complete reference to the source documentation. (Sources referenced in the automated data base as well as those referenced in the report are included in the reference section of the report.) Cross-referencing of issues as derived by Allen Corporation with the critical questions in the IHX System MANPRINT Management Plan (June 1986) was subsequently performed to enhance the utility of the results.

#### Results

A total of 101 issues was identified, defined, and analyzed. Of these, 42 represented multiple entries, leaving 59 unique issues. Of the 101 issues, 96 were human factors, health hazards, or training issues. Issues for which solution was designated as "Essential" to IHX success are presented in Table 1. Table 1 is a data base print-out, one of several formats routinely available within the automated system. Table 1 is designed to illustrate a portion of the data base as well as to highlight the "Essential" issues. Details on all issues are presented in the automated data base listings contained in Appendix A of the report. Explanations of the column headings on the print-out in Table 1 follow:

SMMP Critical Question Number - a cross reference to the specific critical question(s) in the IHX SMMP with which the "Allen Derived Issue" (Fourth Column) is associated. For data entry purposes, question numbers containing less than three digits were converted to three digits numbers, e.g., 1.1 was entered as 1.01 whereas 1.10 was unaltered and entered as 1.10. The letter "R" following some numbers denotes new critical questions recommended by the contractor for addition to the SMMP.

Oper = 1, Main = 2, Supt = 3 - type of activity affected by the issue. Only the number is entered in the column: Operation = 1, Maintenance = 2, Support = 3.

Critical Question - the Critical Question, if there is one, in the LHX SMMP that corresponds to the Allen Derived Issue.

Allen Derived Issue - IHX MANPRINT issue statement or questions adopted by the analysts.

Documentation Supporting Issue Selection - an abbreviated reference to the source document that best makes the case for an issue. The number in this column uniquely identifies the source within the document data base where complete reference information is given.

Responsible Agency - principal Army agency having cognizance over the subject matter of the issue.

When Resolved - event or phase within the LHX program development schedule at which time resolution of the issue is needed.

Source Document IDNO - the unique identification number (IDNO) under which the source is listed in the document data base. The entry may be for the same source as that in column five or for a corroborative source. Letter use is:

A = Analysis Document

P = Plans or Program Management Documents

R = Requirements Documents

Paragraph or Page in Source Document - detailed reference to location within the source document of information on the issue. The Source Document may be the same document supporting issue selection or it may be a corroborative source.

Criticality Score - significance to the achievement of LHX mission objectives of resolving the issue. E = Essential, H = High, M = Medium, L = Low.

MANPRINT Domain - the MANPRINT domain in which the issue has major impact. HF = Human Factors Engineering, HH = Health Hazards, MPWR = Manpower, PERS = Personnel, SS = System Safety, TNG = Training.

Source of Solution - page reference and identification number (IDNO) of document discussing proposed solution(s) to the issue.

Risk - level of technological risk (H = High, M = Medium, L = Low) as estimated in source indicated by document identification number, page, and paragraph.

Status - an abbreviation indicating the status of issue resolution. PEND - Pending, RES = Resolved, UNRES = Unresolved, UNK = Unknown.

Table 1

IHX MANPRINT SMMP Critical Question Report

SMMP CRITICAL QUESTION NUMBER	OPER=1 MAIN=2 SUPT=3		ALLEN DERIVED ISSUE	DOCUMENTATION SUPPORTING ISSUE SELECTION
	1		CAN A PILOT SUCCESSFUL'Y ENGAGE OTHER HELICOPTE IN AIR TO AIR COMBAT WHILE FLYING THE A/C?	R1001 0&0 PLAN
•	-			
	1	•	VISUAL DISPLAY PARAMETERS MUST FALL WITHIN ACCEPTABLE OPERATIONAL LIMITS.	A1075, HH ISSUES PAGE 18
1.0	1	IS SINGLE PILOT OPERABILITY FEASIBLE?	CAN A SINGLE PILOT OPERATE THE LHX IN THE GIVEN OPERATIONAL MODE SUMMARY AND MISSION PROFILES?	
1.01	1	IS THE WIDE FIELD OF VIEW DISPLAY TECHNOLOGY MATURE TO SUPPORT LSD FSD?	CAN AN EFFECTIVE AND ACCEPTABLE HELMET MOUNTED DISPLAY BE DEVELOPED FOR LHX?	. A1083, HFEA 1-1/17/86 (FOUO)
1.09	1	IS THE SINGLE PIOT ABLE TO EFFECTIVELY HANDLE ALL EMERGENCY PROCEDURES AND ASSOCIATED ACTIONS?	DESIGN OF LHX NEEDS TO ASSURE THAT ALL EMERGENCY PROCEDURES CAN BE PERFORMED BY A SINGLE PILOT.	

Table 1 (continued)

IHX MANPRINT SMMP Critical Question Report

RESPONSIBLE AGENCY	WHEN RESOLVED	SOURCE DOCUMENT IDNO	IN SOURCE	CALITY SCORE	SOLU'N		MANPRINT DOMAI	
P*/TRADOC	OT II	R1C01	III OPERATIONAL PLAN, PAR 2 "THESE CAPABILITIES INCLUDE AIR-TO-AIR COMBAT" III, PAR 4.d. "THE DESTRUCTION OF ENEMY AIRCRAFT WITH AIR-TO-AIR WEAPONS IS THE LHX'S PRIMARY CONTRIBUTION TO THE TOTAL FORCE AIR DEFENSE EFFORT."				HF	PEND. RFP
PM	FS0	A1075	PAGE 18	E			H.F.	PEND. RFP
₽₩	OT II	R1002	PAR 5, ESSENTIAL CHARACTERISTICS a(3) AND ANNEX B TO LOA, AND PAR 4 OF O&O (R:001) GUIDANCE LETTER, LHX MILESTONE I/II, DECISION REVIEW BY ASARC. DAMA-RA 21 NOV 85 (IDNO R:007) ENCL 6, ENCL 8.			H A1003 P.R-67 PAR C P.R-39 PAR 2(i)	HF -	PEND. RFP
PM	FSD	A1083	P1 (FOUO)	E	A1083 HFEA P.1	L A1081 P.8 M/H A1003 P.R-60, PAR 2		PEND. RFP
PW	PRIOR TO FSD	A1093	P20 (FOUC)	E .	A1083 HFEA P.20	. 611 6	HF	PEND.

# Table 1 (continued)

# IHX MANPRINT SMMP Critical Question Report

SMMP CRITICAL QUESTION NUMBER	OPER=1 MAIN=2 SUPT=3	•	ALLEN DERIVED ISSUE	DOCUMENTATION SUPPORTING ISSUE SELECTION
1.10/1.11/1.14/7.11/7.12	1		DOES THE SINGLE CREA MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	A1083, HFEA 22-1/17/85 (FOUO)
1.11/1.14/7.11/7.12	1	-CAN A SINGLE PILOT REACT TO CHANGES IN THE MISSION?	DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	A1083, HFEA 22-1/17/86 (FOUO)
1.12	1	ACQUISITION SYSTEM OPERATE QUICKLY AND ACCURATELY	CAN THE TARGET ACQUISITION PROCESS BE SUCCESSFULLY AUTOMATED TO ASSURE EFFECTIVE SINGLE CREW MEMBER OPERATIONS?	A1083, HFEA 24-1/17/86A (FOUO)
1.13/1.14/7.12	1	THE MISSION AND HAVE		A1083, HFEA 25-1/17/86A (FOUO)
7.14/7.11/7.12	1	WILL SINGLE POINT FAILURES OF THE SYSTEM AUTOMATION INCREASE PILOT WORKLOAD SO AS TO PREVENT MISSION ACCOMPLISHMENT OR REDUCE SURVIVABILITY?	DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	A1083, HFEA 22-1/17/86 (FOUO)

Table 1 (continued)

IHX MANPRINT SMMP Critical Question Report

RESPONSIBLE AGENCY	WHEN RESOLVED	SOURCE DOCUMENT IDNO		PAGE/PARA IN SOURCE DOCUMENT	SCORE .	SOLU'N	RISK	MANPRINT DOMAIN	
РМ	07 1:	A1083	P22	(FOUO)	Ē	A1083 HFEA P.22		HF .	PEND.
PM,	0- ::	A1083	P22	(F0U0)	Ē	A1083 HFEA P.22		HE	PEND. RFP
PM	FSC	A1083	P24	(FOUO)	E	A1083 HFEA P.24	M/H A1081 P.8 & P.9 H A1003 P.R-56- 57,PAR	H=	PENO. RFP
PM,	FSC	A1083	P25	(F0U0)	Ε	A1083 HFEA P.25	(j)	•	PEND. RFP
P¥	07 ]]	A1083	P22	(FOUO)	E	A1083 HFEA P.22		HF	PEND. RFP

# Table 1 (continued)

# LHX MANPRINT SMMP Critical Question Report

				DOCUMENTATION SUPPORTING ISSUE SELECTION
1.15	1			
1.17		SECONDARY SWITCHES AND BUTTONS ON THE SIDE-ARM-CONTOLLER DEGRADE THE PILOT'S PERFORMANCE?	THE HUMAN INTERACTIONS AND MORKLOAD RELATED TO FLYING THE AIRCRAFT WITH A "SIDE-ARM-CONTROLLER" AND CONTROLLING OTHER FUNCTIONS AT THE SAME TIME ARE NOT FULLY ASSESSED.	A1083, HFEA 32-1/17/86 (FOUO)
1.15/7.08	1	PILOTAGE SYSTEM ALLOW A SINGLE PILOT TO FLY NOE AT THORNOOTHER THO	WEATHER CONDITIONS WHICH REQUIRES A WIDE FIELD OF VIEW WITH SUITABLE SENSITIVITY AND	A1083, HFEA 37-1/17/86A (FOUO)
\$.02	:	REQUIREMENTS OF THE COCKPIT SYSTEMS (NIGHT VISION	MAINTENANCE AND FARP HAS NOT	
5.15	1	WHAT IS THE ANTHROPOMETRIC DESCRIPTION OF THE POPULATION OF INDIVIDUALS INVOLVED IN OPERATING, MAINTAINING AND SUPPORTING THE LHX? (I.E., RANGE OF PHYSICAL DIMENSIONS FOR MEN & WOMEN)	ANTHROPOMETRIC PEQUIREMENTS HAVE NOT BEEN ESTABLISHED FOR THE LHX.	A1075, HH ISSUES, P-10

Table 1 (continued)

IHX MANPRINT SMMP Critical Question Report

RESPONSIBLE AGENCY	WHEN RESOLVED	SOURCE DOCUMENT IDNO		PAGE/PARA IN SOURCE DOCUMENT	CALITY SCORE	OF SOLU'N		MANPRINT DOMAIN	
PM	FSD	A1083	P27	(F0U0)	E		H A1081 P.8	HF	PEND. RFP
Pff.	FS0	A1083	P32	(FOUO)	Ε	A1083 HFEA P.32			RES. HFEA
PN	FSD	A1083	P37	(F0.0)	E	A1083 HFEA P.37	H A1081 P.8	l HF	PEND. RFP
Pit	FSC	A1083	P52	? <b>(FO</b> UO)	£	A1083 HFEA P.29		HF .	PEND. RFP
РИ.	RFP	A1075	нн	ISSUES, P-10	E	R1010 RFP P2.3. .16.4 AND 3.3.3	2	HF	RES. RFP

# Table 1 (continued)

# IHX MANPRINT SMMP Critical Question Report

SMMP CRITICAL QUESTION NUMBER	OPER=1 MAIN=2 SUPT=3 =====		ALLEN DERIVED ISSUE	OCCUMENTATION SUPPORTING ISSUE SELECTION		
7.08	t	PILOTAGE SYSTEM ALLOH A SINGLE PILOT TO FLY NOE AT NIGHT AND IN ADVERSE	REQUIRES A WIDE FIELD OF VIEW WITH SUITABLE SENSITIVITY AND	A1083, HFEA 37-1/17/86A (FOUO)		
7.11/7.12	1	CAN A SINGLE PILOT COMPLETE THE MISSION, GIVEN SINGLE POINT FAILURES?	DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	A1083, HFEA 22-1/17/86 (FOUO)		
7.12	1	WILL SINGLE POINT FAILURES OF THE SYSTEM AUTOMATION INCREASE PILOT WORKLOAD SO AS TO PREVENT MISSION ACCOMPLISHMENT OR REDUCE SURVIVABILITY?	DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	A1083, HFEA 22-1/17/86 (FOUO)		
7.12	1	WILL SINGLE POINT FAILURES OF THE SYSTEM AUTOMATION INCREASE PILOT WORKLOAD SO AS TO PREVENT MISSION ACCOMPLISHMENT OR REDUCE SURVIVABILITY?	WHAT SYSTEMS ARE AUTOMATED AND HOW SPECIFIC AUTOMATION ACCOMMODATES SINGLE CREW MEMBER OPERATION HAS NOT BEEN COMPLETELY ASSESSED. HF DESIGN STANDARDS DO NOT FULLY ADDRESS ISSUES AND TRADE OFFS IN AUTOMATION AND COGNITIVE OVERLOAD.	A1083, HFEA 25-1/17/86A (FOUO)		
	1		IS CONTRACTOR DELIVERED TRAINING LIMITED TO PILOT TRAINING? STATEMENT IN ROC IS NOT CLEAR.	R1003 ROC		

Table 1 (continued)

LHX MANPRINT SMMP Critical Question Report

RESPONSIBLE AGENCY	WHEN RESOLVED	SOURCE DOCUMENT IDNO	###£	PAGE/PARA IN SOURCE DOCUMENT	CALITY SCORE	SOLU'N		MANPRINT DOMAIN	
PM	FSD	A1083	P37	(F0UO)	E	A1083 HFEA P.37	H A1081 P.8	HF	PEND. RFP
Р¥	CT I!	A1053	P22	(F0UO)	:	A1383 HFEA P. 22		HF	PEND. RFP
р¥	07 11	A1093	P22	(FOUC)	E	A1083 HFEA P.22		HF	PEND. RFP
PW.	FSC	A1083	P25	(F0UO)	E	A1083 HFEA P.25	M/H A1081 P.8 & P.9 H A1003 P.R-57, PAR C		PEND. RFP
PM/TRADOC	TOA AP U VOL IX, TNS	R1003		PAGE F-2 GRAPH 2,E	н	R1010 RFP P3.5.1		TNG	RES. RFP

#### Summary

In Tables 2 through 4, the 96 issues in the human factors engineering, health hazards, and training domains are broken out by the various elements of analysis.

Table 2

Number of Issues in the Four Criticality Categories by Status of Solution,
MANPRINT Domain, Responsible Army Agency, and Type of Activity Affected

	Criticality Score				
	Essential	High	Medium	Low	
Status					
Resolved	2	1	2	2	
Pending	17	20	34	10	
Unresolved	0	6	2	0	
Unknown	0	0	0	0	
MANPRINT Domains					
Human Factors	19	21	17	3	
Health Hazards	0	2	3	3 2 7	
Training	0	4	18	7	
Responsible Agency					
Project Manager	19	21	25	3	
Training & Doctrine Command	0	3	13	7	
Logistics Center	0	1	0	0	
Aeromedical Research Lab	0	2	0	2	
Activity					
Operation	19	20	19	8	
Maintenance	0	6	14	3	
Support	0	1	5	1	
Operation Maintenance	0	6	14		

Table 3  $\begin{tabular}{ll} \textbf{Status of Issues by MANPRINT Domains, Responsible Army Agency, and Type of Activity <math> \begin{tabular}{ll} \textbf{Affected}^1 \end{tabular}$ 

	Status				
	Resolved	Pending	Unresolved	Unknown	
MANPRINT Domains					
Human Factors	4	50	6	0	
Health Hazards	1	6	0	0	
Training	2	25	2	0	
Responsible Agency					
Project Manager	6	58	4	0	
Training & Doctrine Command	1	18	4	0	
Logistics Center	0	1	0	0	
Aeromedical Research Lab.	0	4	0	0	
Activity					
Operation	4	54	8	0	
Maintenance	2	21	0	Ō	
Support	ī	6	Ö	Ö	

<sup>&</sup>lt;sup>1</sup>Cell Entries are Numbers of Issues

Table 4
Number of Issues in the MANPRINT Domains by Responsible Army Agency and Type of Activity Affected

	Manprint Domains			
	Human Factors	Health Hazards	Training	
Responsible Agency				
Project Manager	50	6	12	
Training & Doctrine Command	6	0	17	
Logistics Center	1	0	0	
Aeromedical Research Lab	3	1	0	
Activity				
Operation	45	5	16	
Maintenance	12	1	10	
Support	3	1	3	

#### PRODUCTS AND DISCUSSION

#### **Products**

Several products based on this analytical effort outside of this report were previously delivered in response to bona fide requests. The first of these was an interim report and briefing on the progress and status of this work. This was received by ARI in July 1986. Another product entitled "Comments on The New IHX System MANPRINT Management Plan (SMMP)" consisted of up-dated SMMP pages, one of each of all but four of the critical questions. The added information included complete cross-referencing to appropriate paragraphs in the IHX Request for Proposal (RFP) plus references to pertinent studies and analyses where available. In addition, comments on the SMMP and 13 recommended new critical questions were offered. This product, initially delivered in August 1986, was further updated the following month. A third product was comprised of comments on the June 1986 version of the IHX Human Factors Engineering Analysis (HFFA). This product was supplied in September 1986.

An important product delivered concurrently with this final report consists of the Administrator's Annex and the computer disks for the IHX MANPRINT Issues Data Base Management System (DEMS). The DEMS is documented and described with examples in Appendix A of this report. The three floppy disks delivered to ARI contain the complete data base file and operating software for the DEMS (except, of course, the copywrited dBASEIII as explained in Appendix A). These disks allow those with suitable computer hardware to immediately use the DEMS. Furthermore, the system can be adapted for use with material systems other than the IHX.

#### Discussion

In order to enhance the utility of results, this work was modified to keep pace with IHX MANPRINT activities within the Army. The second draft of the RFP, two versions of the HFEA, and the IHX SMMP (June 1986) were among the important documents that appeared during the period of performance. The use of those documents as source material for this effort and the products of this effort directed, in turn, at the HFEA, and SMMP have reconfirmed issues and brought about a mutual convergence on many issues. That is not to say that the set of issues in the SMMP, the HFEA and this report are identical. There are differences among the sets of issues, the point is that on the major issues these three documents are not widely disparate. (The point may also be taken as a compliment on how well Army agencies are doing their job on this first test of MANPRINT in a major new material acquisition.)

There were several important omissions among the documentation available to this effort. The Cost and Operational Effectiveness Analysis (COEA) and especially the Cost and Training Effectiveness Analysis (CTEA) no doubt would have been most useful, especially on issues in the training domain. Training issues presented in this report should be cross-checked with those documents when they become available. Also, information from the Advanced Rotorcraft Technology Integration (ARTI) program, not available to

us, will hopefully contribute to issue solution particularly in the human factors engineering domain. Finally, an updated Target Audience Description (TAD), in all likelihood, would have furnished additional useful information.

As previously noted, many issues affected more than one MANPRINT domain and more than one type of activity (operation, maintenance, support). This analysis has captured those interrelationships through multiple entries in the automated data base. However, this applies only to the human factors engineering, health hazard, and training domains within the scope of this analysis. The interrelations with issues in the other three domains (manpower, personnel and system safety) were not the objective of this effort. The manpower, personnel and system safety issues for IHX were investigated under a separate effort and are documented in ARI Working Paper MSG 88-02, IHX MANPRINT Integration.

Another effect not captured by this, or any other available analysis, has to do with subsequent impact of issue resolution on another system, unit, or agency. An issue raised concerning manpower requirements provides an example. If manpower requirements are underestimated, this will lead to development of an inadequate training base and ultimately to inadequate recruiting. The initial underestimate of manpower requirements may take several years of repair. Further analysis to assess and present these second and third order effects would appear worthwhile.

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### APPENDIX A LHX MANPRINT ISSUES DATA BASE MANAGEMENT SYSTEM DOCUMENTATION

#### ISSUES Reported by SMMP Critical Question Number Sequence

The following listing is shown in critical question number sequence. When there is more than one listing for a given critical qustion number, the issues are arranged so that operator issues appear first, followed by maintainer issues and finally, support issues. Issues are finally arranged by issue type so as to group issues of like type together. This listing was prepared for ease of reference, using the critical question number as the search key. (Some issues did not have a corresponding critical question number. Hence, these issues are listed first.)

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LHX MANPRINI SMMP CRITICAL QUESTION REPORT (1SREP-S)

	the second secon				• •	
SOURCE OF SOLU'N RISK MAMPRINT DOMAIN STATUS	PEND.	PEND. RFP	PEND	PERSJANNEL SKTLL PEND	PEND.T OA AP U VOL 1X	RES RFP
RISK MANPRIN	¥	뚶	壬	PERSCAN	ING	TNG
						R1016 RFP P3.5.1
	ш ш ≥ ≥	w	ب	 	ــ	æ
PAGE/PARA IN SOURCE DOCUMENT	111 OPERATIONAL PLAN, PAR 2 'THESE CAPABILITIES INCLUDE AIR-TO-AIR COMBAT' 111, PAR A.d. "THE DESTRUCTION OF ENEMY AIRCRAFT WITH AIRCRAFT WITH AIR-TO-AIR WEAPONS IS THE LHY'S PRIMARY COMTRIBUTION TO THE TOTAL FORCE AIR DEFENSE EFFORT."	PAGE 18	,	ROC PAGE 6 PARAGRAPH L 9		ROC PAGE F-2 Paragraph 2,e
SOURCE DOCUMENT TONO	1000 12	A1075	P1038	R1003	P1038	R1003
RESPONSIBLE AGENCY WHEN RESOLVED	07 11	FSD	01 11	PRIOR TO 07 11	PUBLICATION OF CTEA	TOA AP U VOL IX. TNG
	PM/TRADUC	æ	USAARL FT	TRADOC	TRADOC FT	PM/TRADOC
DOCUMENTATION SUPPORTING ISSUE SELECTION	R1001 050 PLAN	A1075, HH 1SSUES PAGE 18	P1038, LHX TSM-1SSUES Gewerated from 3 dec 1985 ft Rucker meeting	R1003 ROC	P1038, LHX TSM-ISSUES GEWERATED FROM 3 DEC 1985 FT RUCKER MEETING	R1003 ROC
ALLEN DERIVED 15SUE	CAN A PILOT SUCCESSFULLY ENGAGE OTHER HELICOPTERS IN AIR TO AIR COMBAT WHILE FLYING THE A/C?	VISUAL DISPLAY PARAMETERS MUST A1075, HH ISSUES PAGE 18 Fall Mithin Acceptable Operational Limits.	IS THERE DEGRADATION OF PILOT PERFORMANCE OR ARE THERE LONG-TERM HEALTH IMPLICATIONS STEMMING FROM CURRENT LHX DESIGN?	WHAT IS THE NUMBER OF SKILLS AND WHAT SKILL LEVELS ARE REQUIRED FOR CURRENT LIGHT FLEET OPERATIONS? LHX SHOULD REDUCE THIS.	WHAT IS THE MOST COST EFFECTIVE AND TRAINING EFFECTIVE MIX OF PARI-TASK, FULL MISSION SIMULATOR AND OPERATIONAL AIRCRAFT IN INITIAL ENTRY LHX PILOT TRAINING?	IS CONTRACTOR DELIVERED TRAINING LIMITED TO PILOT TRAINING? STATEMENT IN ROC IS NOT CLEAR.
OPEN=1 #AIN=2 SUPT=3 CRITICAL QUESTION						
	-	••	~	-	-	-
SMMP CRITICAL QUESTION NUMBER						

Page No 32,05/87

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TUS	<u>.</u>	٠ -			
MANPRINT DOMAIN STATUS	PEND.	PERSONNEL SKILL PEND	RFP.	MANPHR INST TNG UNK	RFP RFP
MANPRINT (	뚶	PERSONNEL	差	MANDUR IN	노
RISK	M/H M1081 P.8-5 H M1003 P.R-67 PAR C				H A1003 HF P.R-67 PAR C P R-39 PAR 2(1)
	HFEA A P. 25 F		R1010 RFP P2.3.2 .8.8.2		
CRITI- SOURCE CALITY OF SCORE SOLU'N	<b>x</b>	J	E	¥	ш
PAGE/PARA IN SOURCE DOCUMENT	P25 (F0U0)	ROC PAGE 6 PARAGRAPH L 9	HH ISSUES, P-16	ROC PAGE F-9 PARAGRAPH 7,C	PAR 5, ESSENTIAL CHARACTERISTICS a(3) AND ANNEX B TO LOA, AND PAR 4 OF 0&O (R1001) LHX MILESTONE LYTTER, OECISION REVIEM BY ASARC. DANA-RA 21 MOY 85 (IDNO R1007) ENCL 6, ENCL 8.
SOURCE DOCUMENT IDNO	A1083	R1003	A1075	R1003	R1002
WHEN RESOLVED	F30	PRIOR TO OT 11	RFP	PRIOR TO PRODUCTION	11 10
RESPONSIBLE AGENCY		TRADOC	¥	TRADOC	# TO .
DOCUMENTATION SUPPORTING ISSUE SELECTION	A1083, HFEA 25-1/17/86A (FOUO)	R1003 ROC	A1075, HH ISSUES, P-16	R1003 ROC	R1007 GUIDANCE LETTER, LHX MILESTONE 1/11, DECISION REVIEW BY ASARC, DANA-RA 21 NOV BS SUCL 6. ENCL 8.: R1001 0&0 "THE LHX OPERATIONAL MODE SUMMARY IN ANNEX A/8
ALLEN DERIVED ISSUE	MHAT SYSTEMS ARE AUTOMATED AND A1083, HFEA 25-1/17/86A HOW SPECIFIC AUTOMATION ACCOMODATES SINGLE CREW MEMBER COMPLETELY ASSESSED. HF DESIGN STANDARDS DO NOT FULLY ADDRESS ISSUES AND TRADE OFFS IN AUTOMATION AND COGNITIVE OVERLOAD.	WHAT IS THE NUMBER OF SKILLS AND WHAT SKILL LEVELS ARE REQUIRED FOR CURRENT LIGHT FLEET OPERATIONS? LHX SHOULD REDUCE THIS.	OPTIMAL PATIENT CARE NOT PROVIDED. NO OXYGEN, COOLING, OR OVER PRESSURE PROVIDED FOR PATIENTS.	MILL THE LARGER LHX FLEET RESULT IN AN INCREASE IN THE TOTAL NUNBER OF PERSONNEL REQUIRED TO OPERATE AND ADMINISTER COMPLEX LHX TRAINING DEVICES?	IS SINGLE PILOT OPERABILITY CAN A SINGLE PILOT OPERATE THE R1007 GUIDANCE LETTER, LHX FEASIBLE? LHX IN THE GIVEN OPERATIONAL MODE SUMMARY AND MISSION REVIEW BY ASARC, DAMA-RA 21 PROFILES? 060 "THE LHX OPERATIONAL MODE SUMMARY IN ANNEX A/B.
OPER-1 MAIN-2 SUPT-3 CRITICAL QUESTION					IS SINGLE PILOT OPERABILITY FEASIBLE?
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SWMP CRITICAL QUESTION NUMBER					1.0

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: "X MANPRINT SMMP CRITICAL QUESTION REPORT (1SREP-S)

	MANPRINT DOMAIN STATUS	PEND.	PEND.	PEND. RFP	PENO	PEND	PEWD.
	RISK MANPRINT DO	L A1081 HF P 8 M/H A1003 P.R-60,	PAR 2 HF	Έ	¥	L A1081 HF P.8	M/H HF A1003 P. R-27. PAR C
	SOURCE OF SOLU'N	A1083 HFEA P.1	P1 A1083 P1 HFEA P.2	A1083 HFEA P.12		A1083 L.A. HFEA P.8 P.14	A1083 M/H HFEA A100 P. 15 P.R. PAR
		"	±	±	±	Ŧ	I
		P1 (F0U0)	P2 (F0U0)	P12 (F0UO)	- P13 (F0U0)	P14 (F0U0)	P15 (FOUO)
	SOURCE DOCUMENT IDNO	A1083	A1083	A 1083	A1083	A1083 F	A1083
(INDEXED ON SMMP + TYPECO + ISSUTYP)	WHEN RESOLVED	P# FS0	550	550	75 2	550	II 10
N SMMP + 1	RESPONSIBLE AGENCY		u.	u.	či.	₩.	
(INDEXED (	P. P	(F0U0) PM	(F0U0) PM	å	(FOUO) PM	*	TRADOC
	DOCUMENTATION SUPPORTING ISSUE SELECTION	, HFEA 1-1/17/86	MITH HND A1083, HFEA 2-1/17/86 (FOUO) PM OSSIBLE EVICES 15?	A1083, HF& 12-1/17/86 (FOUO)	A1083 HFEA 13-1/17/86 (FOUO) PM	OF THE A1083, HFEA 14-1/17/86A HE MAP (FOUO) AT	A A1083, HFEA 15-1/17/86A (FOUO) ?
	ALLEN DERIVED ISSUE		CAN LHX FLIGHT HELMET WITH HND SIGHTING SYSTEM, AND POSSIBLE NBC, LASER, AND FLASH BLINDNESS PROTECTIVE DEVICES MEET WEIGHT REQUIREMENTS?	CLEAR SPEECH COMMUNICATION AND A1083, HEA 12-1/17/86 AUDIO CUES ARE CRITICAL FOR (FOUU) SINGLE PILOT OPERATION. IMPROVEO SPEECH INTELLISIBILITY OVER CURRENT AIRCRAFT IS NECESSARY.	LHX CONCEPTS PROVIDE: (1) HELMET MOUNTED NIGHT VISION SYSTEM OR (2) NIGHT VISION GOGGLES FOR VITLITY PILOT. #1 LEAVES SECOND CREM NEMBER WITH NO N. V. CAPABILLIY. WITH #2, CURRENT SAFETY AND OPERATION CONSTRAINTS PRECLUDE SINGLE PILOT NIGHT OPERABILITY.	THE RESOLUTION/ACCURACY OF THE DIGITAL DATA BASE FOR THE MAP DISPLAY IS LESS THAN THAT REQUIRED FOR NOE/ADVERSE WEATHER NAVIGATION.	SCAT COMBAT MISSION INCLUDES A A1083, HFEA 15-1/17/86A REQUIREMENT FOR THE PILOT TO (FOUO) MAINTAIN FLIGHT CONTROL AND/OR PERFORM A TARGET DESIGNATION TASK WHILE EFFECTIVELY USING THE TURRETE; GUN IN AN OFF-AXIS ENGAGEMENT. CAN THESE TAKES ENGAGEMENT. CAN THESE SUCCESSFULLY?
	OPER=1 MATN=2 SUPT=3 CRITICAL QUESTION	1S THE MIDE FIELD OF VIEW DISPLAY TECHNOLOGY MATURE TO SUPPORT LSD FSD?	IS THE INTEGRATED HELMET DEVELOPMENT SUPPORTIVE OF 3.95 LB CRITERIA?	ARE THE SPEECH COMMUNICATIONS AND AUDIO SUES OF SUFFICIENT CLARITY AND INTELIGIBILITY TO PERMIT EFFECTIVE COMMUNICATION?	IS SINGLE PILOT OPERABILITY LHX CONCEPTS PROVIDE: SUPPORTED EFFECTIVELY BY HELMET MOUNTED NIGHT VINIGHT VISION GOGGLE SYSTEM OR (2) NIGHT VIDHAT VINIGHT OF STATION?  LEAVES SECOND CREM RED NO N. V. CAPABILITY. MI CURRENT SAFETY AND OPP CONSTRAINTS PRECLUDE S PILOT NIGHT OPERABILITY	IS DIGITAL DATABASE MAP SUPPORTIVE OF SINGLE PILOT OPERATION?	CAN THE PILOT EFFECTIVELY FLY AND NAVIGATE THE AIRCRAFT WHILE SIMULTANEOUSLY ACQUIRING AND SERVICING TARGETS, ESPECIALLY FOR OFF-AXIS WEAPON EMPLOYMENT?
		-	-	~	-	-	-
	SMMP CRITICAL QUESTION NUMBER	10.1	1 02	1 62	7.04 -	1.05	1.06

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LHX MANPRINT SHMP CRITICAL QUESTION REPORT (1SREP-S)

OMAIN STATUS	PEND.	PEND	PEND.	PEND.	PEND.	PEND.
RISK MANDRINT DOMAIN STATUS	M A1081 HF P.8 P.8 P.R-63 PAR (h) & P.R-VII	M A1003 HF P.R-35, PAR 3	TNG	#	<del>L</del>	뚶
SOURCE OF SOLU'*	A1083 M A1 HFEA P.8 P.18 H A1 P.R- F.R- P.R- -45	# 0 9 6 # 8 8 0		A1083 HFEA P.20	A1083 HFEA P.22	A1083 HFEA P.22
CRITI- CALITY SCORE	±	æ	ĸ	w	u	w
PAGE/PAKA IN SOURCE DOCUMENT	P18 (F0UO)	LHX MANPRINT MANAGERENT PLAN ANNEX E, P. E-17	PAGE HEADING 'HELICOPTER, TRAINING, OPERATOR: NO PAGE NUMBER A1083 P19	P20 (F0U0)	P22 (F0U0)	P22 (F0JIO)
SOURCE DOCUMENT 10NO	A1083	P1036	P1038	A1083	A1083	A1083
MHEN RESOLVED	FSO	RF P	PRIOR TO FSD	PRIOR TO FSD .	11	11 11
RESPONSIBLE AGENCY	£	PM/HEL	TRADOC FT	W.	₹	£
DOCUMENTATION SUPPORTING ISSUE SELECTION	A1083, HFEA 18-1/17/86A (FOUO)	A:083, HFEA 19-1/17/86 (FOUO)	P1038 LHX TSM-ISSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING A1083, HFEA 19-1/17/86 (FOUO)	A1083, HFEA 20-1/17/86A (FOUO)	A1083, HFEA 22-1/17/86 (FOUO)	A1083, HFEA 22-1/17/86 (FOUG)
ALLEN DERIVED 15SUE	VOICE RECOGNITION SYSTEMS ARE MECESSARY TO REDUCE PILOT MORKLOAD. TECHNOLOGY DOES NOT APPEAR SUFFICIENTLY MATURE TO "MET THE REQUIREMENT UNDER COMBAT CONDITIONS.	HOM DO PSYCHOMOTOR AND COCALITYE PERFORMANCE REQUIREMENTS FOR LHX COMPARE MITH THOSE OF AIRCRAFT BEING REPLACED OR OTHER AIRCRAFT IN THE DOD INVENTORY?	CAN THE AVAILABLE OPERATORS (PILOTS) BE SUCCESSFULLY TRAINED MITHIN THE TIME, COST OF CURRENT SYSTEMS, AND MITHOUT INCREASING THE CURRENT TRAINING FACILITIES?	DESIGN OF LHX NEEDS TO ASSURE THAT ALL EMERGENCY PROCEDURES CAN BE PERFORMED BY A SINGLE PILOT.	DOES THE SINCLE CREW MEMBER DESIGN ALLOM THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	CAN A SINGLE PILOT REACT TO DOES THE SINGLE CREW MEMBER CHANGES IN THE MISSION? DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?
OPER=1 MAIN=2 SUPT=3 CRITICAL QUESTION	ARE VOICE RECOGNITION SYSIEMS OF SUFFICIENT MATURITY TO PERMIT THEIR USE IN THE LHX?	IS THE AVIATOR TO OPERATE HOW DO PSYCHOMOTOR AND AS THE SYSTEM INTERRATOR OR COGNITIVE PERFORMANCE THE COMMANDER?  REQUIREMENTS FOR LHX (MITH THOSE OF AIRCRAF)  RECLACEO OR OTHER AIRCRAF  THE DOD INVENTORY?	IS THE AVIATOR TO OPERATE CAN THE AVAILABLE OPERATOR AS THE SYSTEM INTEGRATOR OR (PILOTS) BE SUCCESSFULLY THE COMMANDER?  THE COMMANDER?  OF CURRENT SYSTEMS, AND MITHOUT INCREASING THE CIRCLES AND MITHOUT INCREASING THE CURRENT SYSTEMS.	IS THE SINGLE PIOT ABLE TO EFFECTIVELY HANDLE ALL EMERGENCY PROCEDURES AND ASSOCIATED ACTIONS?	CAN A SINGLE PILOT COMPLETE DOES THE SINGLE CREW THE MISSION, GIVEN SINGLE DESIGN ALLON THE PIL POINT FAILURES? FLEXIBILITY DE REAT MISSION CHANGES, DEG EQUIPMENT MODES, AND EFFECTIVELY PERFORM MISSION?	CAN A SINGLE PILOT REACT TO CHANGES IN THE MISSION?
	-	-	-	-		2 1
SMMP CRITICAL QUESTION NUMBER	1.07	1, 08/3, 03/3, 04	1.08/3.03/3.04/4.0	1.09	1.10/1.11/1.14/7.11/ 1 7.12	1.11/1.14/7.11/7.12

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TATUS	PEND.	PER PP 0.0	RFP.	PEND.	PEND.	HFEA.
MANPRINI DOMAIN STATUS	₹ ₹		፟	ž ž	ã āz	<b>≅</b> ₹
	<u></u>	HF-176	#	눞	#	¥.
RISK	M/H A1081 P.8 & P.9 H A1003 57,PAR	(J) M/H A1081 P.8 & P.9 H. A1003 P.R-67,			H A1081 HF P.8	M/H A1003 P.R-VII -17 SUMMARY
CRITI- SOURCE CALITY OF SCORE SOLU'N	A1083 HFEA P.24	A1083 HFEA P.25	A1083 HFEA P.22	A1083 HFEA P.26	A1083 HFEA P.27	A1083 HFEA P.32
	ш	w	w	I	LLI	w
PAGE/PARA IN SOURCE DOCUMENT	P24 (F0U0)	P25 (F0U0)	P22 (FQUO)	P26 (F0U0)	P27 (F0UO)	P32 (F0UO)
SOURCE DOCUMENT I DNO	A1083	A1083	A 1083	A1083	A1083	A1083
WHEN RESOLVED	550	PS0	11 10	PRIOR TO FSD	F50	FSD
RESPONSIBLE AGENCY	¥	£	¥	£	£	æ.
DOCUMENTATION SUPPORTING ISSUE SELECTION	(FOUO)	A1083, HFEA 25-1/17/86A (FOUO)	A1083, HFEA 22-1/17/86 (FOUO)	A1083, HFEA 26-1/17/86 (FOUG)	A1083, HEA 27-1/17/86 (FOUO)	083, HFEA 32-1/17/86 0U0)
ALLEN DERIVED ISSUE	CAN THE TARGET ACQUISITION PROCESS BE SUCCESSFULLY AUTOMATED TO ASSURE EFFECTIVE SINGLE CREW MEMBER OPERATIONS?	WHAT SYSTEMS ARE AUTOMATED AND A1083, HFEA 25-1/11/86A HOW SPECIFIC AUTOMATION (FOUO) ACCOMPODATES SINGLE CREN MEMBER OPERATION HAS NOT BEEN COMPLETELY ASSESSED. HF DESIGN STANDARDS DO NOT FULLY ADDRESS ISSUES AND TRADE OFFS IN AUTOMATION AND COGNITIVE OVERLOAD.	DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT WODES, AND EFFECTIVELY PERFORM THE MISSION?	HOW CAN IN-FLIGHT DATA ENTRY SYSTEMS, REDUCE WORKLOAD TO LEVELS REQUIRED FOR SUCCESSFUL OPERATIONS?	CAN TECHNOLOGY ACCOMPLISH THE AUTOMATIC FLIGHT CONTROL WHICH IS CRITICAL TO SINGLE CREW MEMBER OPERATION?	THE HUMAN INTERACTIONS AND A1083, HFEA 32-1/11/86 MORKLOAD RELATED TO FLYING THE (FOUO) AIRCRAFT MIH A "SIDE-ARM-COMTROLLER" AND COMTROLLING OTHER FUNCTIONS AT THE SAME TIME ARE NOT FULLY ASSESSED.
OPER=1 MAIN=2 SUPT=3 CRITICAL QUESTION	CAN THE AUTOMATIC TARGET ACQUISITION SYSTEM OPERATE QUICKLY AND ACCURATELY ENOUGH TO ALLOM THE SINCLE PILOT TO ACCOMPLISM THE MISSION AND HAVE ACCEPTABLE SURVIVABILITY?	CAN SYSTEM AUTOMATION REDUCE PILOT WORKLOOD TO A POINT THAT WILL LALLON THE SINGLE PILOT TO ACCOMPLISH THE MISSION AND HAVE ACCEPTABLE SURVIVABILITY?	MILL SINGLE POINT FAILURES OF THE SYSTEM AUTOMATION INCREASE PILOT MORKLOAD SO AS TO PREVENT MISSION ACCOMPLISHMENT OR REDUCE SURVIVABILITY?	MHAT DATA ENTRY PROCEDURES PRESENT THE LEAST WORKLOAD TO THE PILOT AND THE LEAST DIVERSION OF HIS ATTENTION FROM THE BATTLEFIELD?	CAN FLIGHT CONTROL AUTOMATION REDUCE WORKLOAD ENOUGH FOR THE SINGLE PILOT TO ACCOMPLISH THE MISSION?	DOES THE MOUNTING OF SECONDARY SHITCHES AND BUTTOMS ON THE SIDE-ARM-CONTOLLER DEGRADE THE PILOT'S PERFORMANCE?
OPER=1 MAIN=2 SUPT=3	-	-	-	-	-	-
SMMP CRITICAL QUESTION NUMBER	2.7	1.13/1.14/7.12	1.14/7.11/7.12	1.15	9-	1.17

Page No 02/09/87

.HX MANPRINI SMMP CRITICAL QUESTION REPORT (ISREP-S)

IN STATUS	REND.	UNRES	UNRES	UNRES	UNRES	UNRES
MANPRINT DOMAIN STATUS	¥	높	노	生	生	HF-1NG
RISK	H A1081 HF P.8		P. 8	H A1081 HF P.8	ж A1081 нF Р.8	
SOURCE OF SOLU'N	A1083 HFEA P.37	THIS DATA BASE AND A1083 HFEA	= a:			A1083 HFEA P.16
-	w	±	x	x	±	
PAGE/PARA IN SOURCE DOCUMENT	P37 (F0U0)	P11 (F0U0)	BTA, P3, PARA 1.8	BIA, P3, PARA 1.8	81A, P3, PARA 1.8	P16 (F0U0)
	A1083	A1083	P1012	P1012	P1012	A 1083
WHEN RESOLVED	FSO	PRIOR TO 0T 11	Р31 РКОСКАМ	P31 PROGRAM	P31 PROGRAM	PRIOR TO OT 11
RESPONSIBLE AGENCY	₹.	<b>₹</b>	æ	£	Æ	TRADOC
DOCUMENTATION SUPPORTING ISSUE SELECTION	A1083, HFEA 37-1/17/86A (FOUO)	A1083, HFEA 11-1/17/86 (FOUO)	P1012, BTA, P3, PARA 1.8	P1012, BIA, P3, PARA 1.8	P1012, 87A, P3, PARA 1.8	A1083, HFEA 16-1/17/86A (FOUO)
35		A1083, (FOUD)				10
ALLEN DERIVED 1550.E	THE SYSTEM FOR MAVIGATING NOE AT MIGHT AND IN ADVERSE MEATHER CONDITIONS WHICH REQUIRES A WIDE FIELD OF VIEW MITH SUITABLE SENSITIVITY AND RESOLUTION, IS A HIGH RISK DEVELOPMENT.	MMAT ARE THE CREW STATION DESIGN CRITERIA FOR THE LHX-UTILITY?	CAN SINGLE PILOT OPERATION BE ACHIEVED WITHOUT MILLIMETER WAVE RADAR & INTEGRATE COMMUNICATION, NAVIGATION, IDENTIFICATION AVIONICS?	CAN SINGLE PILOT OPERATION BE ACHIEVED MITHOUT MILLINETER MAVE RADAR & INTEGRATED COMMUNICATION, MAVIGATION, IDENTIFICATION AVIONICS?	CAN SINGLE PILOT OPERATION BE ACHIEVED MITHOUT MILLIMETER WAVE RADAR & INTEGRATED COMMUNICATION, NAVIGATION, IDENTIFICATION AVIONICS?	FULL CAPABILITY AND REQUIREMENTS AND HUMAN FACTORS (FOUO) AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.
CRITICAL QUESTION	CAN THE NIGHT VISION PILOTAGE SYSTEM ALLOW A SINGLE PILOT DE TY NOE AT MIGHT AND IN ADVERSE MEATHER TO ACCOMPLISH THE MISSION WITH AN ACCEPTABLE LEVEL OF SAFETY?	MHAT ARE THE CREW STATION DESIGN CRITERIA FOR THE LHX-UTILITY INCLUDING THE SECOND CREW MEMBER STATION?	CAN SINGLE PILOT OPERATION BE ACHIEVED MITHOUT MILLIMETER WAVE RADAR AND INTEGRATED COMMUNICATION, INAVIGATION, AND IDENTIFICATION AVIONICS?	CAN SINGLE PILD, OPERATION BE ACHIEVED MITHOUT MILLIMETER MAVE RADAR AND INTEGRATED COMMUNICATION, MAYIGATION, AND IOENTHICATION AND	CAM SINGLE PILOT OPERATION BE ACHIEVED MITHOUT MILLIMETER MAVE RADAR AND INTEGRATED COMMUNICATION, NAVIGATION, AND IDENTIFICATION AND	WHAT ARE THE HUMAN FACTORS SPECIFICATIONS FOR DESIGN OF THE MISSION PLANNING/MAINTENANCE NORKSTATIONS?
OPER=1 MAIN=2 SUPT=3	-	-	-	-	-	-
SAMP CRITICAL QUESTION NUMBER	1. 18/7. 08	96 	1 . 20R	1.20R	1.20R	1.218/4.148

Page No 22/39/83

LHX MANPRINT SMMP CRITICAL QUESTION REPORT (ISREP-S)

SMMP CRITICAL QUESTION NUMBER		OPER-1 MAIN-2 SUPT-3 CRITICAL QUESTION	ALLEN DERIVED ISSUE	DOCUMENTATION SUPPORTING ISSUE SELECTION	RESPONSIBLE AGENCY	RESPONSIBLE AGENCY WHEN RESOLVED	SOURCE DOCUMENT I DNO	SOURCE PAGE/PARA DOCUMENT IN SOURCE 10N0 DOCUMENT	CALITY CALITY SCORE	_ #	RISK MANPRINT DOMAIN STATUS	N STATUS
2.01/6.03	~	ARE THERE ENOUGH PEOPLE IN THE LHX UNITS TO SUPPORT, MAINTAIN AND OPERATE THE SYSTEM?	THE AMOUNT OF NOW MAINTENANCE A1083, HFEA 31-1/17/86 TASKS PER INDIVIDUAL MAINTAINER MAY INCREASE AS THE MAINTENANCE POPULATION DECREASES.	A1083, HFEA 31-1/17/86 (FOUO)	PM-1LS	01 11	A1004	TOA, APPENDIX U, VOL IX, TRAINING P U-19. PARA. PARA 4.	<b>x</b>	A1083 HFEA P.31	JA G	PEND. T OA AP U VOL IX
2.04/3.02/1.218	~	MHAT ARE THE MANDOMER AND PERSONNEL REQUIREMENTS FOR THE MISSION PLANNING/MAINTENANCE HORNSTATIONS?	FULL CAPABILITY AND REQUIREMENTS AND HUMAN FACTORS (FOUO) AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	A1083, HFEA 16-1/17/86A (FOUO)	TRADOC	PRIOR TO OT 11	A1083	P16 (F0U0)	* I o	A 1083 HFEA P. 16	보	PEND.
2. 04/3. 02/1. 218/4. 14 1 R	- <del>-</del>	MHAT ARE THE MANPOWER AND PERSONNEL REQUIREMENTS FOR THE MISSION PLANNING MAINTENANCE MORKSTATIONS?	FULL CAPABILITY AND REQUIREMENTS AND HUMAN FACTORS (FOUO) AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	A1083, HFEA 16-1/17/86A (FOUO)	TRADOC	PR10R TO 0T 11	A 1083	P16 (F0U0)	× ï α.	A1083 HFEA P. 16	生	PEND.
2.04/3.02/4.148	~	MHAT ARE THE MANPOMER AND PERSONNEL REQUIRENENTS FOR THE MISSION PLANNING/MAINTENANCE MORKSTATIONS?	FULL CAPABILITY AND REQUIREMENTS AND HUMAN FACTORS (FOUO) AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	A1083, HFEA 16-1/17/86A (FOUG)	TRADOC	PRIOR TO 01 11	A1083	P16 (F0U0)	∢ I a	A1083 HFEA P. 16	JN C	PEND.
2.05R	~	CAN ALL UNIT MAINTENANCE FUNCTIONS BE PERFORMED BY NO MORE THAN THREE DIFFERENT MOS, INCLUDING CREW CHIEF?	CAN ALL UNIT MAINTENANCE FUNCTIONS BE PERFORMED BY NO MORE THAN THREE DIFFERENT MOS, INCLUDING CREM CHIEF?	R1003 ROC	PM/1LS	PRIOR TO FS0	R1003	ROC PAGE 6 PARAGRAPH M 9	# #		PERSONNEL LRU	UNRES
3.02/1.218/4.148	~	MHAT ARE THE MANPOMER AND PERSONNEL REQUIRENENTS FOR THE MISSION PLANNING/PA INTENANCE MORKSTATIONS?	FULL CAPABILITY AND A1083, REQUIREMENTS AND HUMAN FACTORS (FOUO) AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	A1083, HFEA 16-1/17/86A (FOUO)	TRADOC	PRIOR TO 0T 11	A1083	P16 (F0UO)	≖ ∢ Ξ Δ	A1083 HFEA P.15	HF-TNG	PEND.

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LHX MANPRINT SHMP CRITICAL QUESTION REPORT (1SREP-S)

MANPRINT DOMAIN STATUS	HF PEND.	PEWD.	PEND	PEND.	RES	RES. HFEA
	M A 1003 HF P.R-35, PAR 3	JNG	# 41003 HF P. R-35, 9AR 3 a, b	7NG	ING	HF-TNG
CRITI- SOURCE CALITY OF SCORE SOLU'N		_				A1083 HFEA P.23
PAGE/PARA IN SOURCE DOCUMENT	LHX MANPRIN? MANAGEMENT PLAN ANNEX E, P. E-17	PAGE HEADING HELICORE, TRAINING, OPERATOR' NO PAGE NUMBER A1083 P19	LHX MANPRINT MANASSMENT PLAN ANNEX E, P. E-17	PAGE HEADING "HELICOPTER, TRAINING, OPERATOR" NO PAGE NUMBER A1083 P19	PAR 5.a.(3) "THE LHX M MILL BE DESIGNED TO MINIMIZE OPERATIONS AND SUPPORT COSTS FOR THE LIFE OF THE SYSTEM."	P23 (F0U0) L
SOURCE DOCUMENT TONG	P1036	P1038	P1636	P1038	R1003	A1083
WHEN RESOLVED	RF P	PRIOR TO FSD	RFP	PRIOR TO FSD	TOA AP U VOL. IX	11 10
RESPONSIBLE AGENCY		TRADOC 5 FT	PM/HE.	TRADOC	TRADOC	E d
DOCUMENTATION SUPPORTING ISSUE SELECTION	A1083, HFEA 19-1/17/86 (FOUO)	P1038 LHX TSM-ISSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING A1083, HFEA 19-1/17/86 (FOUO)	A1083, HFEA 19-1/17/86 (FOUO)	P1038 LHX TSM-ISSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING A1083, HFEA 19-1/17/86 (FOUO)	R1003 ROC	A1083, HFEA 23-1/17/86 (FOUO)
ALLEN DERIVED ISSUE	HOW DO PSYCHOMOTOR AND COGNITIVE PERFORMANCE PEQUIREMENTS FOR LHX COMPARE WITH THOSE OF AJRCRAFT BEING REPLACED OR OTHER AJRCRAFT IN THE DOD INVENTORY?	CAN THE AVAILABLE OPERATORS (PLIOTS) BE SUCCESSFULLY TRAINED WITHIN THE TIME, COST OF CURRENT SYSTEMS, AND WITHOUT INCREASING THE CURRENT TRAINING FACILITIES?	HOW DO PSYCHOMOTOR AND COGNITIVE PERFORMANCE REQUIREMENTS FOR LIK COMPARE WITH THOSE OF AIRCRAFT BEING REPLACED OR OTHER AIRCRAFT IN THE DOD INVENTORY?	CAN THE AVAILABLE OPERATORS (PILOTS) BE SUCCESSIVILLY TRAINED MITHIN THE TIME, COST OF CURRENT SYSTEMS, AND WITHOUT INCREASING THE CURRENT TRAINING FACILITIES?	E DONE	MMAT IS THE IMPACT OF THE USE OF METRIC MEASURE ON MAINTENANCE AND MAINTENANCE TRAINING?
OPER=1 MAIN=2 SUPT=3 CRITICAL QUESTION	CAN AN AVIATOR WITH THE INTELLIGENCE AND SKILL LEVELS OF CURRENT AVIATORS AND EXPECTED FUTURE RECRUITS EFFECTIVELY OPERATE THE ADVANCED SYSTEMS?	CAM AN AVIATOR NITH THE INTELLIGENCE AND SKILL LEVELS OF CURRENT AVIATORS AND EXPECTED FUTURE RECRUITS EFFECTIVELY OPERATE THE ADVANCED SYSTEMS?	WHAT ADDITIONAL SKILLS ARE REQUIRED OF THE LHX AVIATOR?	WHAT ADDITIONAL SKILLS ARE REQUIRED OF THE LHX AVIATOR?	IS THERE AN EFFECTIVE MEANS HOW CAN SCAT TRAINING BE TO PROVIDE SCAT PILOT AT THE UNIT LEVEL WITHOU TRAINING WITHOUT THE USE OF PROVIBITIVELY EXPENSIVE TWO SEAT SCAT TRAINING FIELDING TO UNITS OF A ZAIRCRAFT?	MILL THE USE OF METRIC TOOLS AND MEASUREMENT ADVERSELY AFFECT MAINTENANCE TRAINING?
	~	-	-	~	-	2
SMMP CRITICAL QUESTION NUMBER	3, 03/3, 04	3.03/3.04/4.0	3 04	3.04/4.0	6.0)	4.02/5.01

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LHX MANPRINT SMMP CRITICAL QUESTION REPORT (1SREP-S)

				11.7	ארערה הוא השושל א	(indexed on owner + indeed + isodiff)	_					
SAMP CRITICAL QUESTION NUMBER	OPER=1 MAIN=2 SUPT=3	OPER=1 MAIN=2 SUPT=3 CRITICAL QUESTION	ALLEN DERIVED ISSUE		RESPONSIBLE AGENCY	HEN B			CRITI- CALITY SCORE	SOURCE OF SOLU'N R	RISK MANPRINT DOMAIN STATUS	AIN STATUS
03	_	MHAT TRAINING FOR OPERATORS AND MAINTAINERS SHOULD TAKE PLACE AT THE UNIT?	MMAT TRAINING FOR OPERATORS MHAT ARE THE UNIT TRAINING A1083, AND MAINTAINERS SHOULD TAKE REQUIREMENTS FOR OPERATORS AND (FOUU) PLACE AT THE UNIT? INITIAL SKILLS, REQUALIFICATION, AND TACTICAL TRAINING?	A1083, HFEA 30-1/17/86 (FOUO)	TRADCC	PRIOR TO FSD	A 1083	P30 (F0U0)			A1083 TNG PEND T HFEA OA AP P.30 U VOL	PEND.T OA AP U VOL 1X
· 03	~	WHAT TRAINING FOR OPERATORS AND MAINTAINERS SHOULD TAKE PLACE AT THE UNIT?	WHAT TRAINING FOR OPERATORS WHAT ARE THE UNIT TRAINING A1083, AND MAINTAINERS SHOULD TAKE REQUIREMENTS FOR OPERATORS AND (FOUU) PLACE AT THE UNIT? INTRINSIS IN TERMS OF INITIAL SKILLS, REQUALIFICATION, AND TACTICAL TRAINING?	A1083, HFEA 30-1/17/86 (FOUO)	TRADOC	PRIOR TO FSD	A1083	P30 (FOUO)	<b>x</b>	A1083 HFEA P.30	JMG	PEND. T OA AP U VOL IX
<b>*</b> 03	m	WHAT TRAINING FOR OPERATORS AND MAINTAINERS SHOULD TAKE PLACE AT THE UNIT?	MHAT TRAINING FOR OPERATORS MHAT ARE THE UNIT TRAINING A1083, HFEA 30-1/11/86 AND MAINTAINERS SHOULD TAKE REQUIREMENTS FOR OPERATORS AND (FOUO) PLACE AT THE UNIT? MAINTAINERS IN TERMS OF IN:TTAL SKILLS, REQUALIFICATION, AND TACTICAL TRAINING?	A1083, HFEA 30-1/17/86 (FOUO)	TRADOC	PRIOR TO FSD	P1038	LHX TSM-1SSUES GENERATED AT 3 DEC 1985 ET RUCKER MEETING	Σ.	A1083 HFEA P.30	TNG	PEND.T OA AP U VOL IX
4.04/4.05	~	MMAT IS THE EFFECT ON INSTITUTIONAL TRAINING OF MAVING TO COMDUCT TWO LEVEL MAINTAINANCE TRAINING SIMULTANEOUSLY DURING THE LHX PHASE-IN PERIOD?	MMAT IMPACT DOES TWO LEVEL MAINTENANCE HAVE ON INSTITUTIONAL AND UNIT LEVEL MAINTENANCE TRAINING DURING LHX 'PHASE IN' PERIOD AND WHEN STEADY STATE CONDITIONS ARE REACHED?	A1083, HFEA 33-1/17/86 (FOUO)	PM/11.5	PRIOR TO PRODUCTION	A1083	P33 (F0U0)	<b>x</b>	A1083 HFEA P.33	TNG	PEND.
\$0°	~	MHAT IS THE EFFECT ON UNIT Training?	MHAT IMPACT DOES THO LEVEL NAINTENANCE HAVE ON INSTITUTIONAL AND UNIT LEVEL MAINTENANCE TRAINING DURING LHX "PHASE IN" PERIOD AND WHEN STRADY STATE CONDITIONS ARE REACHED?	A1083, HFEA 33-1/1./86 (FOUO)	P#/11.S	PRIOR TO PRODUCTION	A1083	P33 (F0UO)		A 1083 HFEA P.33	TNG O	PEND.
90.7	-	MILL THE TRAINING PLAN PRODUCE ENOUGH PEOPLE MITH THE RIGHT TRAINING TO SUPPORT THE LHX SYSTEM AS IT IS FIELDED?	IS THE TRAINING PLAN ADEQUATE A1083, HFEA 33-1/17/86 TO SUPPORT LHX FIELDING AT THE (FOUO) PROJECTED RATE?	A1083, HFEA 33-1/17/86 (FOUO)	PM/TRADOC	PRIOR TO FSD	A1083	P33 (F0UO)	E	A 1083 HFEA P. 33	TNG	PEND

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THX MANPRINI SMMP CRITICAL QUESTION REPORT (15REP-5)

TATUS	PEND	PEND.	PEND. T. OA AP U VOL IX	PEND.	RFP	DA AP ON VOL.
MANPRINT DOMAIN STATUS	<u>a</u>	<u>a</u>	ã O ⊅ H	ac ax	ā œ	4 O D H
RISK MANPRII	JNG	ING	TNG	TNG	TNG	JAG
SOLU'N SOLU'N	A 1983 HFEA P.33	A1083 HFEA P.33	A1C83 HFEA P.17	A1083 HFEA P.38	A1083 HFEA P.38	
CRITI- CALITY SCORE	ı	×	_	æ	×	
PACKYPAKA IN SOURCE DOCUMENT	P33 (F0UO)	P33 (F0U0)	P17 (F0UO)	, HFEA P38 (FOUO)	HFEA P38 1/11/86 (FOUO)	050 VI. PAR I TRAINING WILL BE DESIGNED, VALIDATED, AND ADMINISTERED FOR OPERATOR, MAINTENANCE, AND SUPPORT PERSONNEL IN ACCORDANCE WITH US ARMY TRAINING AND DOCTRINE COMMAND (TRADOC), US ARMY MAIREREL COMMAND (AMC) AND
SOURCE DOCUMENT I DNO	7,1083	A1083	A 1083	A1083	A1083	R1001
WHEN RESOLVED	PRIOR TO FSD	PRIOR TO FSD	PRIOR TO FSD	FSG	FSO	CTEA
RESPONSIBLE AGENCY	PM/TRADOC	PM/TRADOC	TRADOC	<b>₹</b>	¥.	TRADOC
Supportion 1SSUE SELECTION	A1083, HFEA 33-1/17/86 (FOUO)	A1083, HFEA 33-1/11/86 (FOUO)	A1083, HFEA 17-1/11/86A (FOUG)	P1038, LHX TSM-ISSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING A1083, HFEA 38-1/11/86A (FOUO)	P1038, LHX TSM-ISSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING	P1038, LHX TSM-ISSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING
ALLEN DERIVED 15SUE	IS THE TRAINING PLAN ADEQUATE A1083, TO SUPPORT LHX FIELDING AT THE (FOUO) PROJECTED RATE?	IS THE TRAINING PLAN ADEQUATE A1083, HFEA 33-1/17/86 TO SUPPORT LHX FIELDING AT THE (FOUD) PROJECTED RATE?	AS THE LHX ENTERS THE INVENTORY CLRRENT TRAINING ATRORACT MAY BE REPLACED BY LHX. THE LHX TRAINING PROCRAMY/SYSTEM/ATRORACT SHOULD BE ESTABLISHED TO INCLUDE IERM.	WILL THE LHX DESIGN TAKE ADVANTAGE OF COMPUTER ASSISTED TRAINING (EMBEDDED TRAINING) TECHNOLOGIES FOR INITIAL AND UNIT TRAINING?	MILL THE LHX DESIGN TAKE ADVANTAGE OF COMPUTER ASSISTED TAALNING (EMBEDDED TRAINING) TECHNOLOGIES FOR INITIAL AND UNIT TRAINING?	HOW CAN THE USE OF NEW TECHNOLOGY SIMPLIFY AND REDUCE TRAINING RESOURCES?
CRITICAL QUESTION	MILL THE TRAINING PLAN PRODUCE ENOUGH PEOPLE MITH THE RIGHT TRAINING TO SUPPORT THE LHX SYSTEM AS IT IS FIELDED?	MILL THE TRAINING PLAN PRODUCE ENOUGH PEOPLE MITH THE RIGHT TRAINING TO SUPPORT THE LHX SYSTEM AS IT IS FIELDED?	SHOULD THE LHX BE USED IN Inital Entry Rotor Wing Training?	CAN EMBEDDED TRAINING BE WILL THE LHX DESIGN TAXE UTILIZED IN THE LHX? WILL ADVANTAGE OF COMPUTER AS EMBEDDED TRAINING REDUCE TRAINING (EMBEDDED TRAIN INSTRUCTOR REQUIREMENTS AND TECHNOLOGIES FOR INITIAL IMPROVE TRAINING  ACCESSABILITY?	CAN ENGEDDED TRAINING BE MILL THE LHX DESIGN TAKE UTILIZED IN THE LHX? MILL ADVANTAGE OF COMPUTER ASSENDEDED TRAINING (ENGEDDED TRAINING TRAINING (ENGEDDED TRAINING TRAINING (ENGEDDES FOR INITIAL INPROVE TRAINING UNIT TRAINING?	CAN EMBEDDED TRAINING BE UTILIZED IN THE LHX? WILL EMBEDDED TRAINING REQUCE INSTRUCTOR REQUIREMENTS AND IMPROVE TRAINING ACCESSABILITY?
MAIN=2 SUPT=3	~	<b>m</b>	-	<del>-</del>	~	-
SWMP CRITICAL QUESTION NUMBER	90	90.7	4.67	80° <b>-</b>	80.	4.08/4.12R

## LHX MANPKINI SMMP CRITICAL (UESTIUM REPUR! (ISKEP-S)

IN STATUS	PEND.T. OA AP U VOL. IX	PEND.	UNRES	UNRES.	PEND.T	PEND.T. CA AP. U VOL.
RISK MAMPRINI DOMAIN STATUS	J M	PERSONNEL LRU	क्र	TNG	JNG	ŢNĞ
SOURCE OF SOLU'N		A1082 "HARDM AN"	THIS DATA BASE AND A 1083 HFEA	P. 11		
PAGE/PARA IN SOURCE DOCUMENT	TOA, APPENDIX U, VOL M IX, TRAINING P U-12. PARA. MAINTENANCE TRAINING AND P U-28, PARA 4.	ROC PAGE 6 PARAGRAPH M 9	P11 (F000) H	PAGE HEADING H 'HELICOPTER, TRAINING, OPERATORS' (NO PAGE NUMBER)	060 VI. PAR 1 LL BE DESIGNED, VALIDATED, AND ADMINISTERED FOR OPERATOR, MAINTENANCE, AND SUPPORT PERSONNEL IN ACCORDANCE MITH US ARMY TRAINING AND DOCTRINE COMMANU (TRADOC), US ARMY MATERIEL COMMAND (ARC) AND APPROPRIATE MAJOR	COMMANDS* TOA, APPENDIX U, VOL L IX, TRAINING P U-3S
SOURCE DOCUMENT 1DNO	A1004	R1003	A 1083	P1038	R1001	A1004
WHEN RESOLVED	PR10R TO 0T 11	PRIOR TO FSD	PRIOR TO 01 11	11 10	PUBLICATION OF CTEA	PRIOR TO FIELDING A1004
RESPONSIBLE AGENCY	Pn-1LS	PM/1LS	TRADOC	TRADOC	TRADOC	TRADGC
UCCORNIATION SUPPORTING ISSUE SELECTION	ANALYSES OF MAINTENANCE A1004, TOA, APPENDIX U, VOLTRAINING ARE COMPLICATED BY IX, TRAINING P U-12 PARA THE PROSPECT OF ALTERATIONS IN "MAINTENANCE TRAINING" AND P MAINTENANCE MOS'S, 2-LEVEL U-28, PARA 4. MAINTENANCE AND HARDWARE INHOVATIONS.	R1003 ROC	A1083, HFEA 11-1/17/86 (FOUS)	P1038, LHX TSM-ISSUES Generated from 3 dec 1985 ft Rucker meeting	P1038, LHX TSM-ISSUES REDUCE GENERATED FROM 3 DEC 1985 FT RUCKER MEETING	A1004, TOA, APPENDIX U, VOL TRADGC IX, TRAINING P U-35
ALLEN DERIYED ISSUE	AMALYSES OF MAINTENANCE TRAINING ARE COMPLICATED BY THE PROSPECT OF ALTERATIONS IN MAINTENANCE MOS'S, 2-LEVEL MAINTENANCE AND HARDMARE INNOVATIONS.	CAN ALL UNIT MAINTENANCE FUNCTIONS BE PERFORMED BY NO MORE THAN THREE DIFFERENT MOS, INCLUDING CREM CHIEF?	WAAT ARE THE TRAINING REQUIREMENTS FOR THE SECOND CREW MEMBER IN THE UTILITY AIRCRAFT?	ARE TRAINING STANDARDS ADEQUATE TO ALLON SCAT PILOTS TO PERFORM UNDER HIGH TASK LOADING?	HOM CAN THE USE OF NEW TECHNOLOGY SIMPLIFY AND REDUCE TRAINING RESOURCES?	WHAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF OTHER AIRCRAFT STATIONED WITH THE LHX?
CRETICAL QUESTION	CAN THE AVAILABLE MAINTAINER PERSONNEL BE T TAALMED TO MAINTAIN THE T LHX?	CAN THE AVAILABLE  MAINTAINER PERSONNEL BE  FRAINED TO MAINTAIN THE  LHX?	MHAT ARE THE TRAINING WHAT ARE THE TRAINING REQUIREMENTS FOR THE SECOND REQUIREMENTS FOR THE SECOND CREW MEMBER IN THE UTILITY ALRCRAFT?  ALRCRAFT?	ARE TRAINING STANDARDS A ADEQUATE TO ALLOM SCAT A PILOTS TO PERFORM UNDER T HIGH TASK LOADING?	HOW CAN THE USE OF NEW H TRAINING TECHNOLOGY T SIMPLIFY AND REDUCE T TRAINING RESOURCES?	MMAT ARE THE TRAINING MMAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL REQUIREMENTS FOR PERSONNE OF OTHER AIRCRAFT STATIONED OTHER AIRCRAFT STATIONED MITH THE LHX?
	~	~	<del>-</del>	_	-	-
SAMP (RITICAL QUESTLUM NUMBER	§0 <b>*</b>	4 . 09/2 . 05R	4 19.8	₩ 02:	4. 128	4. 138

LMA MANPRINI SMMP CRITICAL QUESTION REPORT (ISREP-S)

12.60 T

SEQUES DF OTH 117H 7	SUPTES CRITICAL QUESTION  WHAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF OTHER AIRCRAFT STATIONED WITH THE LHX?  MHAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF OTHER AIRCRAFT STRUELED	CRITICAL QUESTION  ALLEN DERIVED 155UE  MAAT ARE THE TRAINING WHAT ARE THE TRAINING  REQUIREMENTS FOR PERSONNEL REQUIREMENTS FOR PERSONNEL OF  OF OTHER AIRCRAFT STATIONED OTHER AIRCRAFT STATIONED WITH  THE LHX?  MAAT ARE THE TRAINING  MAAT ARE THE TRAINING  REQUIREMENTS FOR PERSONNEL OF  REQUIREMENTS FOR PERSONNEL OF	SELECTION AGENCY AGENCY AND AGENCY AGENCY AND ATOMA, TOA, APPENDIX U, VOL TRADOC IX, TRAINING P U-35  ATOMA, TOA, APPENDIX U, VOL TRADOC IX, TRAINING P U-35	KESPUNDIBLE AGENCY AGENCY TERRODC TRADOC TRADOC	RESPONSIBLE AGENCY WHEN RESOLVED 10MO THANDOC PRIOR TO FIELDING A1004 TRADOC PRIOR TO FIELDING A1004	DOCUMENT 1DNO 1DNO 1DNO A1004 A1004	IN SOURCE DOCUMENT TOA, APPENDIX U, VOL IX, TRAINING P U-35 TOA, APPENDIX U, VOL IX, TRAINING P U-35	CALITY SCORE TESTEE L	Sotu'n Risk	R I SK
MITH THE WHAT TRA ARE GENE MISSION PLANNING	OF DITER WINCHES STATEMENTS WHAT TRAINING REQUIREMENTS ARE GENERATED BY THE MISSION MORKSTATION?	THE LHX?  FULL CAPABILITY AND  REQUIREMENTS AND HUMAN FACTORS (FOUO) AND TRAINING COMSIDERATIONS COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	A1083, HFEA 16-1/17/88A (FOUO)	TRADOC	PRIOR TO 07 11	A1083	P16 (FQIO)	₹ E Q	A 1083 P. 16	
FILL TOOLS OVERS	HILL THE USE OF METRIC TOOLS AND MEASUREMENT ADVERSELY AFFECT MAINTENANCE?	MHAT IS THE IMPACT OF THE USE OF METRIC MEASURE ON MAINTENANCE AND MAINTENANCE TRAINING?	A1083, HFEA 23-1/17/86 (FOUO)	Æ	11 10	A1083	- P23 (F0U0)	 ≪ ≆ •	A1083 HFEA P.23	
CAN TH REQUIR SYSTEM SYSTEM SYSTEM SISPLA SISPLA SISPLA SISPLA SISPLA SYSTEM	CAN THE LIGHTING REQUIREMENTS OF THE COCKPIT SYSTEMS (NIGHT VISION DEVICES, PANEL AND HELMET DISPLAYS, LASER AND FLASHBLIMDIESS ROTECTORS) BE RESOLVED AND AN INTEGRATED LIGHTIAN SYSTEM DEVELOPED THAT DOES NOT INTERFERE MITH THOSE SYSTEMS OPERATION?	CAN THE LIGHTING AN INTEGRATED APPROACH TO CREM REQUIREMENTS OF THE COCKPIT STATION AND DISPLAY LIGHTING SYSTEMS (WIGHT VISION IS NEEDED. LIGHTING FOR DEVICES, PANEL AND HELMET MAINTENANCE AND FARP HAS NOT DISPLAYS, LASER AND REMEMBERINDESS PROTECTORS) RE RESOLUCED AND AND AND AND AND AND AND AND AND AN	CREM A1083, HFEA 29-1/17/86A ING (FOUC) IOT	×	FS S	A1083	PS2 (F0U0)	₩ <b>*</b> ¥ &	A1083 HFEA P. 29	
HAT L	MHAT LIGHT IS REQUIRED TO FACILITATE MAINTENANCE?	AN INTEGRATED APPROACH TO CREW STATION AND DISPLAY LIGHTING IS NEEDED. LIGHTING FOR MAINTENANCE AND FARP HAS NOT	CREM A1083, HFEA 29-1/17/86A ING (FOUG) 407	<b>\$</b> E	FS0	A1083	P29 (F0U0)	# I A	A 1083 HFEA P29	

CHA MANPRINT SPAR CRITICAL DUESTION REPORT (ISREP-S)

SMMP CRITICAL QUESTION NUMBER		OPEK:1 MAIN:2 SUPF:3 CRITICAL QUESTION	ALLEN DERIVED ISSUE	DOCUMENTATION SUPPORTING ISSUE SELECTION	RESPONSIBLE AGENCY	WHEN RESOLVED	SOURCE DOCUMENT LONG	PAGE/PARA  IN SOURCE  OOCUMENT	CRITI- SOURCE CALITY OF SCORE SOLU'N	RISA	MANPKINI DOMAIN STATUS
\$ 04	m	MMAÍ LIGHTÍNG IS REQUIRED TO FACILITATE FARP ACTIVITIES?	AN INTEGRATED APPROACH TO CREW A1083, HFEA 29-1/11/86A STATIOW AND DISPLAY LIGHTING (FOUO) IS WEEDED: LIGHTING FOR MAINIEMANCE AND FARP HAS NOT BEEN FULLY EVALUATED	A1083, HFEA 29-1/17/86A (FOUO)	<b>&amp;</b>	FSO	A1083	P29 (F0U0)	M A1083 HFEA P.29	HF	PEND RFP
5.05/5.06/5.07/5.08	~	DOES THE LHX DESIGN ALLON DOES THE LHX SYSTEM DESIGNARINEEN ADEQUATELY CONSIDER HUMAN WEARING PROATECTIVE FACTORS IN MAINTENANCE (GARMENTS UNDER ALL CLIMATIC ACCESSIBILITY, PROTECTIVE CONDITIONS? CLOTHING, COMPOSITE MATER REPAIR, ETC)?	DOES THE LHX SYSTEM DESIGN ADEQUATELY CONSIDER HUMAN FACTORS IN MAINTENANCE (E.G. ACCESSIBILITY, PROTECTIVE CLOTHING, COMPOSITE MATERIALS REPAIR, ETC)?	A1083, HFEA 40-1/17/85 (FOUO)	£	PR10R TO FSD	A1083	P40 (F0U0)	M A 1083 HFEA P.40	HF	PENO.
5 05/7.03	C1	DOES THE LHX DESIGN ALLOM FOR MAINTENANCE WHILE MERING PROTECTIVE GARMENTS UNDER ALL CLIMATIC CONDITIONS?	DOES THE LHX DESIGN ALLOH NBC AND COLD WEATHER FOR MAINTENANCE WHILE PROTECTIVE CLOTHING CAN HAVE AFARING PROTECTIVE GARMENTS AN ADVERSE IMPACT ON SOLDIER UNDER ALL CLIMATIC PERFORMANCE.	A1083, HFEA 7-1/17/86A (FOUC)	<b>3</b> . Δ.	11.	A1083	P7 (Fouc)	H A1083 HFEA D7	33 hf	en6 R≈d R≈d
5.07/5 08	C4	DOES THE LHX DESIGN PROVIDE BIT, BITE, AND ATE WHICH THE MAINTAINER CAN USE AND UNDERSTAND?	DOES THE LHX DESIGN PROVIDE DOES THE LHX SYSTEM DESIGN BIT, BITE, AND ATE WHICH ADEQUATELY CONCIDER HUMAN THE WAINTAINER CAN USE AND FACTORS IN MAINTENANCE (E.G. UNDERSTAND? CLOTHING, COMPOSITE MATERIALS REPAIR, ETC)?	A1083, HFEA 40-1/17/85 (FOUO)	<b>₹</b>	PRIOR TO FSD	A 1083	P40 (F0U0)	M A 1083 HFEA P. 40	£ 4.0	2END RFP
5.08	~	DOES THE LHX SYSTEM DESIGNER THE LHX SYSTEM DESIGNER TO OF COMPOSITE MATERIALS FACTORS IN MAINTENANCE (EBEEN CONSIDERED? CLOTHING, COMPOSITE MATERIALS FACTORS IN MAINTENANCE (EREALCONSIDERED? CLOTHING, COMPOSITE MATERIALS)	DOES THE LHX SYSTEM DESIGN ADEQUATELY CONSIDER HUMAN FACTORS IN MAINTEMANCE (E.G. ACCESSIBILITY, PROTECTIVE CLOTHING, COMPOSITE MATERIALS REPAIR, ETC)?	A1083, HFEA 40-1/17/85 (FOUO)	æ.	PR10R 10 FSD	A1083	P40 (F0U0)	A 1083 HFA P.40	7H H	PEN RF P
5.09	-	HAVE ANY PREPLANNED PRODUCT PRODUCT IMPROVEMENT MUST IMPROVEMENTS BEEN EXAMINED FULLY INTEGRATED TO ASSUI FOR MANPRINT IMPLICATIONS? IMPROVED SYSTEM PERFORMAN	PRODUCT IMPROVEMENT MUST BE FULLY INTEGRATED TO ASSURE IMPROVED SYSTEM PERFCRMANCE.	A1083, HFEA 41-1/17/86A (FOUO)	<b>.</b>	START OF P31 PROGRAM	P1038	LHX TSM-1SSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING	M A1083	33 M/h TNG 1 A1003 1 P.R-36. PAR (e)	PEND RFP

ina manprint spwp critical question report (ISREP-S)

MANPRINI DOMATA STATUS	PEND. RFP	PEND. RFP	R F S.	PEND.	PEND.	PENC. RFP
MANPRINT	TNG	뇿	生	生	HF-1NG	눞
	M/H A1003 P.R-36, PAR (e)				M/H A1081 P.8 & P.9	
SOURCE OF SOLU'N RISK	A1083 HFEA P.41	A1083 HFEA P.44	R1010, RFP P2.3.2 .16.4 AND 3.3.3	A1083 HFEA P.3		A1083 HFEA P.4
CALITY OF SCORE SOLU'N	x	<b>x</b>	w	<b>±</b>	± v	_
PAGE/PARA CKITI- IN SOURCE CALITY DOCUMENT SCORE	P41 (F000)	P44 (F0U0)	НН 1SSUES, P-10	P3 (F0U0)	LHX TSN-ISSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING	P4 (FOUO)
SOURCE DOCUMENT 10NO	A1083	A1083	A1075	A1083	P1038	A1083
9ESPONSIBLE AGENCY WHEN RESOLVED	START OF P31 PROGRAM	11 10	RF P	11 10	11 10	E
	æ.	ESG CEN	<b>8</b> .	USAAR:	£	UO) USAARL
DOCUMENTATION SUPPORTING ISSUE SELECTION	A1083, HFEA 41-1/17/86A (FOUO)	(FOUG)	A1075, HH ISSUES, P-10	A1083, KFEA 3-1/17/86A (FOUO)	A1083, HFEA 3-1/17/86A	A1083, HFEA 4-1/11/86 (FOUO) USAARL
ALLEM DEKIVED 159UE	PRODUCT IMPROVEMENT MUST BE FULLY INTEGRATED TO ASSURE IMPROVED SYSTEM PERFORMANCE.	REQUIRED TURN AROUND TIME IN FARP IS 15 MINUTES MITHOUT GHE. REARMING IS TO BE DONE MITH 2 SOLDIERS PER AIRCRAFT.	ANTHROPOMEIRIC REQUIREMENIS HAVE NOT BEEN ESTABLISHED FOR THE LHX	FATIGUE/STRESS/ ANXIETY MAY DEGRADE SINGLE CREM MEMBER PERFORMANCE ESPECIALLY IN DEGRADED MODES OF OPERATION.	HOM SUCCESSFULLY DOES THE CURRENT LAX DESIGN DEAL WITH THE HUMAN FACTORS ISSUES IN COGNITIVE OVERLOAD AND PILOT FATIGUE DURING COMBAT OPERATIONS, CONTINUED CPERATION, AND NBC OPERATIONS?	PROLONGED EXPOSURE TO WHOLE BODY VIBRATION MAY HAVE AN UNDESIRABLE IMPACT ON THE AIRCREW.
CRITICAL QUESTION	HAVE ANY PREPLANNED PRODUCT PRODUCT IMPROVEMENT MUST BE IMPROVEMENTS BEEN EXAMINED FULLY INTEGRATED TO ASSURE FOR MANPRINT IMPLICATIONS? IMPROVED SYSTEM PERFORMANCE	WILL THE DESIGN OF THE LHX ALLON IT TO BE SERVICED AT THE FARP BY ONLY TWO SOLDIEPS WITHOUT GROUND HANDLING EQUIPMENT IN 15 MINUTES?	WHAT IS THE ANTHROPOMETRIC DESCRIPTION OF THE DOPULATION OF INDIVIDUALS TAYOLYED IN OPERATING, MAINTAINING AND SUPPORTING THE LHA? (I.E., RANGE OF PHYSICAL DIMENSIONS FOR MEN	IS THE INTERACTION OF FATIGUE/STRESS/ ANXIETY NA FATIGUE/STRESS/ANXIETY DEGRADE SINGLE CREW MEMBER OVERDEMANDING IN THE SINGLE PERFORMANCE ESPECIALLY IN PLACED COCKPLIT TO THE EXTENT THAT MISSION ACCOMPLISHMENT IS RISKED?	IS THE INTERACTION OF HOW SUCCESSFULLY DOES THE FAITSUE/STRESS/ANXIETY CHRRENT LHX DESIGN DEAL WITH OVERSEMANDING IN THE SINGLE THE HUMAN FACTORS ISSUES IN PLACED COCKPIT TO THE COGNITIVE OVERLOAD AND PLLOT EXTENT THAT MISSION FATGUE DURING COMBAT ACCOMPLISHMENT IS RISKED? OPERATIONS, CONTINUED CPERATION, AND NBC OPERATION	IS WHOLE BODY VIBRATION DETRIMENTAL TO CREW PERFORMANCE AND MISSION ACCOMPLISHMENT?
OPEN: 1 MAIN: 2 SUPT=3	~	m	-	<del></del>	-	-
SMMP CRITICAL QUESTION NUMBER	S 0.9	5. 10	S 5	6,01/7,16	6.01/7.10	6.02

Page No. 32/69/87

CHX MANPRINT SMMP CRITICAL QUESTION REPORT (15REP-S)

PEND.	PEND.	PEND. RFP	PEND.	PEND.	PEND.
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	L. A1003 P.R-58, PAR (d)				
A 1083 HFEA P.5	A1083 HFEA P.6	A1083 HFEA P.7	A1083 HFEA P7	A1083 HFEA P.8	A1083 HFEA P.9
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_		6			
PS (F0U0)	P6 (F0U0)	P7 (FOUC	P7 (F0U0)	P8 (F0UO)	Pg (F0U0)
A1083	A1083	A1083	A1083	A1083	A1083
				FSD	
<b>⊨</b>	SS	11 10	11 10	PR10R 10	<b>L</b>
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/11/86 (F	/11/86A	/17/86A	/11/86A	/17/86A	/17/86A
HFEA 5-1,	HFEA 6-1,	HFEA 7-1,	HFEA 7-1	HFEA 8-1	HFEA 9-1,
A1083,	A1083, (F0U0)	A1083, (FOUO)	A1083, (F0U0)	A1083, (FOUO)	(FOUO)
ISHING LON 1301 SE HEALTH	M, NULD 1 AND E AND I HAZARO.	SOLDIER	SOLDIER	K IS EXTENT OPEFINED.	STEADY STATE AND IMPULSE NOTSE A1083, HFEA 9-1/17/86A LEVELS OF THE LHX MAY DEGRADE (FOUO) ATR AND GROUND GREWS: PERFORMANCE AND MAY POSE HEALTH HAZARDS.
EXTINGU N USE HAI VE ADVERS ERSONNEL	ENTILATIO DOLING CO FECT CREP RFORMANCE A HEALTH	MEATHER LOTHING ( MPACT ON		ESS OF LI MODIFIED HOWEVER TON IS UP	AND IMPU E LHX MAY ND CREWS' AND MAY I OS.
ENT FIRE ENS OFTE H CAN HA	EQUATE V ING OR C RSELY AFI ENGER PE 0 CREATE	AND COLD ECTIVE C DVERSE 11 ORMANCE.	AND COLD ECTIVE C DVERSE 11 ORNANCE.	NHORTHIN NED AS " STD-1290 NODIFICAT	STEADY STATE AND IMPUL LEVELS OF THE LHK MAY ATR AND GROUND CREMS' PERFORMANCE AND MAY PC HEALTH HAZARDS.
22	<b>×</b> .	TVE NBC TH PROT AN A PERF	ш _	S OF CRAS DEFI MIL-	
ONABLE XPOSURE C CESSIVE ALON 1301 ING AGENT	OF THE L ROWMENTAL SUFFICIEN CREW AND COMBA! D LEMENTS?	D PROTECT TIBLE WIT JIPMENT RMIT COMPLISH	PROTECTI TIBLE WIT E EQUIPME ERMIT	ORTHINESS Ceptable Njury and ?	1S EXCESSIVE NOISE ENVIRONMENT PRESENT THAT MILL REDUCE PERSONNEL PERFORMANCE OR CREATE HEALTH HAZAROS?
E A REAS AL FOR E 15 TO EX 1ES OF H TINGUISH	E DESIGN AN ENVI SYSTEM ECT THE ERS FROM NANTS AN	ONNEL AN NT COMPA K AND EQ ES TO PE EL TO AC	ONAL AND INT COMPA K AND TH CES TO P EL TO AC	E CRASHW MEET AC OS FOR I	15 EXCESSIVE NOISE ENVIRONMENT PRESENT TI WILL REDUCE PERSONNEL PERFORMANCE OR CREATE HEALTH HAZAROS?
IS THER POTENTI OCCUPAN QUANTIT	DOES TH PROVIDE CONTROL TO PROT PASSENG CONTAMI	IS PERS EQUIPME THE TAS INERFAC PERSONN FUNCTIO	IS PERS EQUIPME THE TAS INTERFA PERSONN	DOES TH THE LHX STANDAR DEATH A	IS EXCE ENVIRON WILL RE PERFORN
-	-	-	6	-	-
7.01	7.02	03	7.03	7.04	7.05
	1 IS THERE A REASONABLE CURRENT FIRE EXTINGUISHING A1083, HFEA 5-1/17/86 (FOUO) PM TT A1083 PS (FOUO) L A1083 POTENTIAL FOR EXPOSURE OF SYSTEMS OFTEN USE HALON 1301 OCCUPANTS TO EXCESSIVE WHICH CAN HAVE ADVERSE HEALTH QUANTITIES OF HALON 1301 EFFECTS ON PERSONNEL. FIRE EXTINGUISHING AGENTS?	1 IS THERE A REASONABLE CURRENT FIRE EXTINGUISHING A1083, HFEA 5-1/11/86 (FOUO) PM TT A1083 PS (FOUO) L A1083 HFEA POTENTIAL PROCESSIVE WHICH CAN HAVE ADVERSE HEALTH QUANTITIES OF HALON 1301 FFFECTS ON PERSONNEL.  1 DOCES THE DESIGN OF THE LAX INADEQUATE VENTILATION, A1083, HFEA 6-1/11/86A PM FSD A1083 P6 (FOUO) H A1083 L A1003 HF PROVIDE AN EWINGOMENTAL HEATING OR COOLING COULD (FOUU)  1 DOCES THE DESIGN OF THE LAX INADEQUATE VENTILATION, A1083, HFEA 6-1/11/86A PM FSD A1083 P6 (FOUO) H A1083 L A1003 HF PROVIDE AN EWINGOMENTAL HEATING OR COOLING COULD (FOUU)  1 DOCES THE DESIGN OF THE LAX INADEQUATE VENTILATION, A1083, HFEA 6-1/11/86A PM FSD A1083 P6 (FOUO) H A1083 L A1003 HF PROVIDE AN EWINGOMENTAL HEATING OR COOLING CREATE A HEALTH HAZARD.  1 DOCES THE OFFICE OFFICE AFFECT CREW AND PASSENGER PREPORMANCE AND PASSENGERS FROM COMBAT.  1 COULD CREATE A HEALTH HAZARD.  1 CONTANTANTS AND EWINGOMENTAL ELEMENTS.	1 IS THERE A REASONABLE CURRENT FIRE EXTINGUISHING A 1083, HEEA 5-1/11/86 (FOUO) PM TT A1083 PS (FOUO) L A1083 HS PERA COCUPANIS OF SYSTEMS OFFRENCHE HALLH ADVANCE. HALLH ADVANCE HALLH HALAND ADVANCE HALLH ADVANCE HALLH ADVANCE HALLH ADVANCE HALLH HALAND ADVANCE HALLH ADVANCE HALLH ADVANCE HALLH ADVANCE HALLH HALAND ADVANCE HALLH HALAND ADVANCE HALLH ADVANCE HALLH ADVANCE HALLH ADVANCE HALLH HALAND ADVANCE HALLH ADVANC	15   FIGE A REASONABLE   CURRENT FIRE EXTINGUISHING   A 1883, IFEA 5-1/17/86 (FOUC) PM   TT   A 1883   P5 (FOUC)   L   A 1883   PF FEA	15 NESS A RESONABLE   CORRECT FIRE CYTINGUISHING ALMS   MEA 5-1/11/86 (7000) PM   TIT ALMS   PS (7000)   L ALMS   NS (7000)   L ALMS

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THE WANPRINT SMMP CRITICAL QUESTION REPORT (15REP-5)

W STATUS	PEND.	PEND.	PEND.	PEND.	PEND.	PEND
SOUVEE OF SOUR MANAPRINT DOMAIN STATUS	u.	HH-7NG	HH - TNG	±	u.	뱦
RISK M	눞	<b>포</b>	Ŧ	M A1003 HH P.R-35, 36 PAR (d)	Н A1081 НF P.8	<b>x</b>
	A1083 HFEA P.9	A1083 HFEA P. 10	A1083 HFEA P. 10	A1083 HFEA 1	A1083 HFEA 1	A1083 HFEA P.39
CALITY CALITY SCORE	x	¥	x	×	w	E
SOURCE PAGE/PARA DOCUMENT IN SOURCE IDNO DOCUMENT	P9 (F0U0)	P10 (F0U0)	P10 (F000)	P21 (F0U0)	P37 (FOUO)	P39 (FOUO)
SOURCE DOCUMENT I DNO	A1083	A1083	A1083	A1083	A1083	A1083
WHEN RESOLVED	E	E	E	E	FSO	11
RESPONSIBLE AGENCY	Æ.	<u>.</u>	<u>}.</u>	₹.	æ.	ž.
DOCUMENTATION SUPPORTING ISSUE RESPONSIBLE SELECTION AGENCY WHEN RESOLVED	83, HFEA 9-1/17/86A UO)	A1083, HFEA 10-1/17/86 (FOUO)	A1083, HFEA 10 1/17/86 (F0UO)	83, HFEA 21-1/17/86 JO)	A1083, HFEA 37-1/17/86A (FOUO)	A1083, HFEA 39-1/17/86A (FOUO)
ALLEN DERIVED ISSUE	STEADY STATE AND IMPULSE NOISE A1083, HFEA 9-1/11/86A LEVELS OF THE LHX MAY DEGRADE (FOUG) AIR AND GROUND CREMS' PERFORMANCE AND MAY POSE HEALTH HAZARDS	LASERS AND IR RADIATION CAN A1083, PRODUCE VISUAL DANAGE DURING (FOUO) COMBAT AND TRAINING. RF AND MICROMAVE EXPOSURE ARE POTENTIAL HEALTH HAZAROS.	LASERS AND IR RADIATION CAN A1083, PRODUCE VISUAL DAMAGE DURING (FOUO) COMBAT AND TRAINING. RF AND MICROMANE EXPOSURE ARE POTENTIAL HEALTH HAZARDS.	IS THE SIMGLE CREMMEMBER IS THE SINGLE CREM MEMBER LMX A1083, HFEA 21-1/17/86 LMX MORE OR LESS SURVIVABLE MORE OR LESS SURVIVABLE THAN A (FOUO) THAN A TWO CREMMEMBER. TWO CREM MEMBER AIRCRAFT? AIRCRAFT?	THE SYSTEM FOR NAVIGATING MOE A1083, AT NIGHT AND IN ADVERSE MEATHER CONDITIONS WHICH REQUIRES A NIDE FIELD OF VIEW NITH SUITABLE SENSITIVITY AND RESOLUTION, IS A HIGH RISK DEVELOPMENT.	MILL THE FATIGUE AND STRESS A1083, FROM THE MAINTENANCE BURGEN OF (FOUO) SUSTAINED CONTINUOUS OPERATIONS ADVERSELY AFFECT MISSION ACCOMPLISHMENT?
OPER=1 SMMP CRITICAL MAIN=2 QUESTION NUMBER SUPT=3 CRITICAL QUESTION	IS EXCESSIVE NOISE ENVIRONMENT PRESENT THAT MILL REDUCE PERSONNEL PERFORMANCE OR CREATE HEALTH HAZARDS?	IS THE PROTECTION OF PERSONNEL FROM LASERS, RADIO FREQUENCY AND MICROMANE SUFFICIENT TO PRECLUDE HEALTH SAFETY HAZAROS?	IS THE PROTECTION OF PERSONNEL FROM LASERS, RADIO FREQUENCY AND MICROMANE SUFFICIENT TO PRECLUDE HEALTH SAFETY HALARDS?	IS THE SINGLE CREMEMBER LHX MORE OR LESS SURVIVABLE THAN A TWO CREMMEMBER. AIRCRAFT?	CAN THE NIGHT VISION PILOTAGE SYSTEM ALLON A SINGLE PILOT TO FLY NOE AT NIGHT AND IN ADVERSE MEATHER TO ACCOMPLISH THE MISSION WITH AN ACCEPTABLE LEVEL OF SAFETY?	MHAT WILL BE THE EFFECT OF FATIGUE/STRESS ON LHX MAINTENANCE?
OPER=1 MAIN=2 SUPT=3	۰,	-	~	-	-	2
SAMP CRITICAL QUESTION NUMBER	1.05	7.06	900	7.07	7.08	7.09

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LHX MANPRINT SMMP CRITICAL QUESTION REPORT (1SREP-S)

4 STATUS	PEND	PENO.	PEND.	PEND.	PEND.	PEND.
RISK MANPRINT DOMAIN STATUS						
MANPRI	# #	HF-ING	쓮	뚶	<b>±</b>	HF-TNG
13	M/H A1081 P.8 & P.9					M/H A1081 P.8 & P.9 H A1003 P.R-67,
SOURCE OF SOLU'N		A 1083 HFEA P.3	A 1083 HFEA P. 39	A 1083 HFEA P.22	A1083 HFEA P.22	A1083 HFEA P.25
CR171- CAL1TY SCORE	± ::	x	<b>3</b> £	ш	ш	ш
PAGE/PARA IN SOURCE DOCUMENT	LHX TSN-15SUES GEWERATED FROM 3 DEC 1985 FT RUCKER MEETING	P3 (F0UO)	P3\$ (F0UO)	P22 (F0UO)	P22 (F0U0)	P25 (F <b>0</b> 00)
SOURCE DOCUMENT 10NO	P1038	A1083	A1083	A1083	A1083	A1083
WHEN RESOLVED	10 11	11 10	11	07 11	01 11	FSO
	6		0	0	0	ŭ.
RESPONSI AGENCY	£	O) USAAR	Æ	Æ	₹.	£
DOCUMENTATION SUPPORTING ISSUE RESPONSIBLE SELECTION AGENCY	A1083, HFEA 3-1/17/86A	A1083, HFEA 3-1/17/86 (FOUO) USAARI	A1083, HFEA 39-1/17/86A (FOUO)	A1083, HFEA 22-1/17/86 (FOUO)	(FOUO)	A1083, HFEA 25-1/17/86A (FOUO)
ALLEN DERIVED ISSUE	HOW SUCCESSFULLY DOES THE CURRENT LHX DESIGN DEAL WITH THE HUMAN FACTORS ISSUES IN COGNITIVE OVERLOAD AND PILOT FATIGUE DURING COMBAT OPERATIONS, CONTINUED CPERATION, AND NBC OPERATIONS	FATIQUE/STRESS/ ANXIETY MAY DEGRADE SINGLE CREM MEMBER PERFORMANCE ESPECIALLY IN DEGRADED MODES OF OPERATION.	MILL THE FATIGUE AND STRESS A1083, FROM THE MAINTENANCE BURDEN OF (FOUO) SUSTAINED CONTINUOUS OPERATIONS ADVERSELY AFFECT MISSION ACCOMPLISHMENT?	DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DECRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	WHAT SYSTEMS ARE AUTOMATED AND A1083, HFEA 25-1/17/85A HOW SPECIFIC AUTOMATION (FOUD) ACCOMMODATES SINCIE CREW MEMBER OPERATION HAS NOT BEEN COMPLETELY ASSESSED. HF DESIGN STANDARDS OO NOT FULLY ADDRESS ISSUES AND TRADE OFFS I'M AUTOMATION AND COGNITIVE OVERLOAD.
OPER=1 MAIN=2 SUPT=3 CRITICAL QUESTION	HOW MUCH WILL STRESS AND FATIGUE AFFECT MISSION ACCOMPLISHMENT?	HOW MUCH WILL STRESS AND FATIGUE AFFECT MISSION ACCOMPLISHMENT?	HOM MUCH WILL STRESS AND FATIQUE AFFECT MISSION ACCOMPLISHMENT?	CAN A SINGLE PILOT COMPLETE DOES THE SINGLE CREW THE MISSION, GIVEN SINGLE DESIGN ALLON THE PIL POINT FAILURES? RISSION CHANGES, DEG EQUIPMENT MODES, AND EFFECTIVELY PERFORM MISSION?	MIL: SINGLE POINT FAILURES OF THE SYSTEM AUTOMATION INCREASE PILOT WORKLOAD SO AS TO PREVENT MISSION ACCOMPLISHMENT OR REDUCE SURVIVABILITY?	WILL SINGLE POINT FAILURES OF THE SYSTEM AUTOMATION INCREASE PILOT WORALOAD SO AS TO PREVENT MISSION ACCOMPLISHMENT OR REDUCE SURVIVABILITY?
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SMMP CRITICAL QUESTION NUMBER	7 10	7.10	7.10	7.11/7.12	7.12	7.12

ISSUES, Impact, and Proposed Solution Reported by SMMP Critical Question Number Sequence

The following listing is of the Allen derived Issue Statement; the impact of the issue; the proposed solution; the responsible agency; and the event by which the issue is to be resolved. This listing was prepared for ease of reference, using the critical question number as the search key, and may be used in conjunction with the immediately preceding and identically arranged listing.

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LHX ISSUES DATA BASE LISTING OF MEMO FIELDS (lister prg)

WHEN RESOLVED PM/TRADOC 01 11 AGENCY SIBLE PROPOSED SOLUTION (UNKNOWN) THE DEMANDS OF FLYING MAY INTERFERE WITH ABILITY TO ACQUIRE ENEMY A/C DURING AIR TO AIR COMBAT CAUSING EITHER LOSS OF A/C BY FIRE, OR BY LOSS OF CONTROL IMPACT OTHER HELICOPTERS IN AIR TO AIR 01013 CAN A PILOT SUCCESSFULLY ENGAGE COMBAT WHILE FLYING THE A/C? ISSUE STATEMENT ALLEN DERIVED ISSUE CODE QUESTION NO CRITICAL

53 ₹ DETERMINE THE FIELD OF VIEW REQUIRED FOR MELLCOPTER OPERATIONS. PARAMETERS ARE MITHIN RECOGNIZED LIMITS. CONDUCT RESEARCH TO ENSURE THAT DISPLAY DESIGN IMPROPER INFORMATION DISPLAY AND INADEQUATE FIELD OF VIEW CAN DEGRADE PILOT PERFORMANCE FALL MITHIN ACCEPTABLE OPERATIONAL 01055 VISUAL DISPLAY PARAMETERS MUST

11 10 USAARL (UNKNOMN)

PRIOR TO OT 11 TRADOC THE HARDMAN ANALYSIS SHOULD PROVIDE THE INFORMATION. HEALTH HAZARDS. UNCORRECTED HEALTH HAZARDS CAN BE COSTLY TO PILOTS HEALTH AND DETRIMENTAL TO UNIT EFFECTIVENESS. POTENTIAL IMPACT ON PERSONNEL SELECTION, TRAINING MOS DETER-0:311 (PILOT PERFORMANCE) IS THERE DEGRADATION OF PILOT PERFORMANCE OR ARE THERE LONG-TERM HEALTH IMPLICATIONS STEMMING FROM CURRENT 01018 WHAT IS THE NUMBER OF SKILLS LHX DESIGN?

TRADOC (UNKNOMN) MEDIA AND METHODS, TRAINING OF EFFECTIVENESS AND TRAINING EFFECTIVENESS SIDDIES ARE PERFORMED TO DETERMINE THE APPROPRIATE MIX OF TRAINING PILOT TRAINING. UNLESS COST MINATION, UNIT MANNING AND FORCE STRUCTURE. PART-TASK, FULL MISSION SIMULATOR AND OPERATIONAL AIRCRAFT IN INITIAL ENTRY LHX PILOT TRAINING? 01007 WHAT IS THE MOST COST EFFECTIVE AND TRAINING EFFECTIVE MIX OF AND WHAT SKILL LEVELS ARE REQUIRED FOR CURRENT LIGHT FLEET OPERATIONS? LHX SHOULD REDUCE THIS.

PILOTS WILL SUFFER

PUBLICATION OF CTEA

32.23.8

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LHX ISSUES DATA BASE LISTING OF MEMO FIELDS (1)ster prg)

CRITICAL QUESTION NO.	ISSUE CODE	ALLEN DERIVED ISSUE STATEMENT	RESPON- MHEN CRITICAL 15SUE ALLEN DERIVED SILUTION CODE 1SSUE STATEMENT IMPACT PROPOSED SOLUTION AGENCY AGENCY	PROPOSED SOLUTION	RESPON- SIBLE AGENCY	MHEN RESOLVED
	11. 11.1 21.1 11.1	OIDIT IS CONTRACTOR DELIVERED TRAINING LIMITED TO PILOT TRAINING? STATEMENT IN ROC IS NOT CLEAR.	POTENTIAL IMPACT ON TRAINING	CONTRACTOR DELLVERED TRAINING IS ADDRESSED IN 1ST DRAFT RFP AND IS NOT LIMITED TO PILOT TRAINING.	PM/TRADOC	TOA AP U VOL IX, TNG
	M1007 WHA ACC OPE ASS MOT TRA COG	MIDDT WHAT SYSTEMS ARE AUTOMATED AND HOM SPECIFIC AUTOMATION ACCOMMODATES SINGLE CREW MEMBER OPERATION HAS NOT BEEN COMPLETELY ASSESSED. HE DESIGN STANDAROS DO NOT FULLY ADDRESS ISSUES AND TRADE-OFFS IN AUTOMATION AND COGNITIVE OVERLOAD.	IF MAN-MACHINE INTEGRATION WITH AUTOMATED SYSTEMS IS NOT FULLY DEVELOPED, SINGLE CREM NEMBER LHX MISSION ACCOMPLISHENT AND SURVIVABILITY WILL BE GREATLY REDUCED.	ACCELERATE DEVELOPMENT OF CRITICAL INFORMATION PROCESSING TECHNOLOGIES. CONDUCT ANALYSIS, SIMULATION AND EVALUATIONS TO ASSESS CAPABILITIES. REVISE HF DESIGN STANDARDS. DEVELOP EFFECTIVE TRAINING.	ž.	FSD
	M 10C1 WHA AND AND FEE RED	MIGGI WHAT IS THE NUMBER OF SKILLS AND WHAT SKILL LEVELS ARE REQUIRED FOR CURRENT LIGHT FLEET OPERATIONS? LHX SHOULD REDUCE THIS.	POTENTIAL IMPACT ON PERSONNEL SELECTION, TRAINING MOS OETER- MINATION, UNIT MANNING AND FORCE STRUCTURE.	THE HARDMAN ANALYSIS SHOULD PROVIDE THE INFORMATION.	TRADOC	PRIOR TO OT 11
	S1007 0PT.	SIGOT OPTIMAL PATIENT CARE NOT PROVIDED. NO OXYGEW, COOLING OR OVER PRESSURE PROVIDED FOR PATIENTS.	ENHANCED ENROUTE PATIENT CARE WILL RESULT IN A MORE STABLE PATIENT DELIVERED TO A MEDICAL TREATMENT FACILITY AND WILL SPEED RETURN TO DUTY.	2ND DRAFT RFP PROVIDES OXYGEN FOR PATIENTS.	Æ	RF D
	S1001 #ILL RESU TOTA REQU ISTE	S1001 MILL THE LARGER LHX FLEET RESULT IN AN INCREASE IN THE TOTAL NUMBER OF PERSONNEL REQUIRED TO OPERATE AND ADMIN- ISTER THE COMPLEX LHX TRAINING DEVICES?	POTENTIAL IMPACT ON FORCE STRUCTURE	INCLUDE IN HARDMAN AMALYSIS. INCLUDE IN QOPRI. LOOK FOR OFF-SETING REDUCTIONS AS LHX DEVELOPMENT PROGRESSES.	TRABOC	PRIOR TO PRODUCTION

36.44

LHA 13SUES DATA BASE LISTING OF MEMO FIELDS (lister prg)

CRITICAL QUESTION NO	183uE 000E	ALLEN DERIVED ISSUE STATEMENT	IMPACT	PROPOSED SOLUTION	RESPON- SIBLE AGENCY	MHEN RESOLVED
	SUPPLY SUPPLY	0:012 CAN A SINGLE PILOT OPERA'E THE LHX IN THE GIVEN OPERATIONAL MODE SUMMARY AND MISSION PROF.LES?	DIBLE CAN A SINGLE PILOT OPERA THE LHX  SECAUSE OF ANTICIPATED HIGH  IN THE GIVEN OPERATIONAL MODE  SUMMARY AND MISSION PROFILES?  MOULD PROBABLY BE HIGHER THAN THE MORE "QUALITY TIME" THAN BY USING  FOOTRINT TRINING TIME UNLESS  CONVENTIONAL METHODS.  ARE EMPLOYED  ARE EMPLOYED	USE OF INDIVIDUALIZED INSTRUCTION USE OF INDIVIDUALIZED INSTRUCTION MORE "QUALITY TIME" THAN BY USING CONVENTIONAL METHODS.	E.	11 10
-	01022 CAN AN EF HELMET M FOR LHX?	01022 CAN AN EFFECTIVE AND ACC: PTABLE HELMET MOUNTED DISPLAY BL DEVELOPED FOR LHX?	INADEQUATE HMD WILL DEGRADE PILOT PERFORMANCE AND HINDER MISSION PERFORMANCE	WORK BOTH TECHNOLOGY AND HUMAN FACTORS AREAS TO PROVIDE BEST HWD FOR LHX, APPROPRIATE TRAINING	Æ	FSD
30 %	01023 CAN U SYSTEN BLINDE REQUIE	01023 CAN LHX FLIGHT HELMET MITH HMD SIGHTING SYSTEM, AND POSSIBLE NBC, LASER, AND FLASH BLINDESS PROTECTIVE DEVINS MEET MEIGHT REQUIREMENTS?	EXCESSIVE HELMET WEIGHT DEGRADES CREW AND MISSION PERFORMANCE AND POSES POTENTIAL HEALTH HAZARO	DESIGN LHX HELMET SYSTEM TO MEET 3.95 DOUND CRITERIA WITH PROPER CENTER OF GRAUITY AND BALLISTIC AND EVE PROTECTION TO MEET ANSI 287.1 CRITERIA	£	550
1.03	01033 CLEAR AUDIO PILOT INTELL AIRCRA	O1033 CLEAR SPEECH COMMUNICATION AND AUDIO CUES ARE CRITICAL FOR SINGLE PILOT OPERATIONS. IMPROVED SPEECH INTELLIGIBILITY OVER CURRENT AIRCRAFT IS NECESSARY.	LACK OF IMPROVED COMMUNICATIONS CAN INCREASE OPERATOR WORKLOAD AND REDUCE COMBAT EFFECTIVENESS	DEVELOP IMPROVED COMMUNICATIONS FOR LHX TO COINCIDE MITH LHX FSD	¥.	FSD
1.04	01034 LHX CC HELMEI OR #2, UTILIT CREW M MITH # CONSTR	O1034 LHX CONCEPTS PROVIDE EITHER: # 1 HELMET MOUNTED NIGHT VISION SYSTEM, OR #2, NIGHT VISION GOGGLES FOR UTILITY PILOT. # 1 LEAVES SECOND CREW MEMBER WITH NO N. V. CAPABILITY. WITH #2 CURRENT SAFETY AND OPERATION CONSTRAINTS PRECLUDE SINGLE PILOT OPERATION AT NIGHT.	REDUCED NIGHT TIME OPERATING CAPABILITY AND/OR INCREASED HAZARDS, ESPECIALLY AT NOE ALTITUDES.	2ND DRAFT RFP SPECIFIES USE OF NIGHT VISION GOGGLES.	₹.	d.

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LHX ISSUES DATA BASE LISTING OF MEMO FIELDS (lister prg)

10 10 10 10 10 10 10 10 10 10 10 10 10 1	15SUE COOF	CRITICAL ISSUE ALLEW DERIVED DUESTION NO CODE ISSUE STATEMENT	KCSYON- MHEN SIBLE RESOLVED IMPACT AGENCY AGENCY	PROPOSED SOLUTION	RESPON- SIBLE AGENCY	RESOLVED
	01035 TH 011 013 F06	01035 THE RESOLUTION/ACCURACY OF THE DISTAL DATA BASE FOR THE MAP DISPLAY 1S LESS THAN THAT REQUIRED FOR MOE/ADVERSE WEATHER NAVIGATION.	CRITICAL TO SINGLE PILOT OPERATIONS. REDUCTION OF PILOT NAVIGATION WORK LOAD MAY NOT REACH THE DESIRED LEVEL.	EVALUATE PROPOSED SYSTEM CARABILITIES PRIOR TO FINAL CREW COMPLEMENT DECISION.	<b>₽</b>	FSD
	01036 SC/ REC MAI MAI MAI MAI MAI MAI MAI MAI MAI MAI	REQUIREMENT FOR THE PILOT TO MAINTAIN FLIGHT CONTROL AND/OR PERFORM A TARGET DESIGNATION TASK WHILE EFFECTIVELY USING THE TURRETE GUN IN AN OFF-AXIS ENGAGENET. CAN THE PILOT CONCURRENTLY PERFORM THESE TASKS SUCCESSULLY?	IF PILOT WORKLOAD IS TOO HIGH OPERATIONAL EFFECTIVENESS AND SURVIVABILITY OF THE SCAT WILL BE REDUCED	THROUGH SIMULATION AND SURROGATE AIRCRAFT OPERATION, EVALUATE EFFECTIVENESS OF OFF-AXIS ENGAGENENT MHILE PERFORMING FLIGHT TASKS PRIOR TO FINAL CREM COMPLEMENT DECISION.	TRADOC	i 1

13H/Wd ARTI RESULIS. ARMY/NASA CREW STATION SIMULATION STUDIES. IMPACT ON FEASIBILITY OF SINGLE PILOT OPERATION 01058 HOW DO PSYCHOMOTOR AND COGNITIVE PERFORMANCE REQUIREMENTS FOR LHX COMPARE WITH THOSE OF AIRCRAFT BEING REPLACED OR OTHER AIRCRAFT IN THE DOD INVENTORY? 1.08/3.03/3.04

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DEVELOP VOICE RECOGNITION SYSTEM THAT WILL OPERATE EFFECTIVELY IN THE COMBAT ENVIRONMENT.

PILOT WORKLOAD WOULD BE INCREASED TO A CRITICAL DEGREE AND MISSION PERFORMANCE WOULD BE DEGRADED.

O1039 VOICE RECOGNITION SYSTEMS ARE NECESSARY TO REDUCE PILOT MORKLOAD. TECHNOLOGY DOES NOT APPEAR SUFFICIENTLY MATURE TO MEET REQUIREMENTS UNDER COMBAT CONDITIONS.

THE ISSUES DATA BASE LISTING OF MEMO FIELDS (Prefer prg)

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CRITICAL QUESTION NO	155UE CODE	ALLEN DERIVED ISSUE STATEMENT	IMPACT	PROPOSED SOLUTION	RESPON- S18LE AGENCY	MHEN
· 08/3.03/3 04/4 0	01003 CAN T OPEAN TRAIN CURRE INCRE FACIL	1 08/3.03/3 04/4 0 01003 CAN THE AVAILABLE OPERATORS (PILOTS) BE SUCCESSFULLY TRAINED MITHIN THE TIME, COST OF CURRENT SYSTEMS, AND MITHOUT INCREASING THE CURRENT TRAINING FACILITIES?	THE PROPOSED LHX IS A HIGHLY COMPLEX WEADONS SYSTEM PLATFORM AND MAY REQUIRE APITIVES THAT ARE NOT AVAILABLE IN SUFFICIENT QUANTITY AMONG THE PODULATION THAT FEEDS THE PILOT PUOL. IF THIS IS TRUE, THEN PILOTS MITH COMER APITIVES MOULD MAYE TO BE ACCESSED AND TRAINING TIME AND COSTS INCREASED CORRESPONDINGLY.	(имиоми)	TRADOC	PRIOR TO FSD
<b>60</b> · .	01040 DESIG	01040 DESIGN OF LHX NEEDS TO ASSURE THAT ALL EMERGENCY PROCEDURES CAN BE PEGFERMED BY A SINGLE PILOT.	OCCUPANT AND AIRCRAFT SURVIVABILITY DEPENDS UPON THE CAPABILITY TO SUCCESSFULLY PERFORM EMERGENCY PRO- CEDURES.	ASSESS LHX EMERGENCY PROCEDURES AND ESTABLISH APPROPRIATE DESIGN REQUIREMENTS	<b>x</b>	PRIOR TO FSD
1 10/1.11/1.14/7.11/7 12	01042 DOES DESIGN FLEXII CHANGI MODES, THE MI	O1042 DOES THE SINGLE CREW WEMBER DESIGN ALLOW THE PIOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	IF PART OF THE MISSION EQUIPMENT CAPABILITY IS DISABLED, THE PILOT MAY BE UNABLE TO COMPLETE THE MISSION AND/OR RETURN HOME.	PERFORM ANALYSES, SIMULATION AND OPERATIONAL EVALUATION TO ASSURE THAT THE SYSTEM DESIGN PROVIDES SUFFICIENT FLEXIBILITY FOR MISSION SUCCESS.	<u>κ</u>	01 11

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LHX ISSUES 1414 BASE LISTING OF MEMO FIELDS (lister prg)

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31/551			

17 12 41 41 41 41 41 41 41 41 41 41 41 41 41	1SSUE CODE	CRITICA. 15SUE ALLEN DERIVEO QUESTION NO. CODE 15SUE STATENENI	IMPACT	RESPON- WMEN SIBLE RESOLVED IMPACT AGENCY	RESPON- SIBLE AGENCY	RESOLVED
1 11/1 14/7 11/7 12	01042 DOE: 0ES 0ES CHAI 90001 146	O1042 DOES THE SINGLE CREW WEMBER DESIGN ALLOW THE PILOT THE ELEXIBILITY TO REALOT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	IF PART OF THE MISSION EQUIPMENT CAPABILITY IS DISABLED, THE PILOT MAY BE UNABLE TO COMPLETE THE MISSION AND/OR RETURN HOME.	PERFORM ANALYSES, SIMULATION AND OPERATIONAL EVALUATION TO ASSURE THAT THE SYSTEM DESIGN PROVIDES SUFFICIENT FLEXIBILITY FOR MISSION SUCCESS.	₹.	11: 10
	01043 CAN PROT AUTC SIM	OIDA3 CAN THE TARGET ACQUISITION PROCESS BE SUCESSFULLY AUTOMATED TO ASSURE EFFECTIVE SINGLE CREW MENBER OPERATIONS?	ACCURATE AND RAPID ACQUISITION OF TARGETS IS CRITICAL TO OPERATIONA: EFFECTIVEVESS.	PRIOR TO FINAL CREM COMPLEMENT DECISION, EVALUATE THE TECH- WOLOGIES THROUGH SIMULATION AND OPERATIONAL ASSESSMENTS.	<b>X</b> .	. FSD
1.13/1.14/7.12	01046 WHA1 AND ACO OPER ASSE NOT TRAD	O1046 WHAT SYSTEMS ARE AUTOMATED AND HOW SPECIFIC AUTOMATION ACCOMODATES SINGLE CREN MEMBER OPERATION HAS NOT BEEN COMPLETELY ASSESSED. HF DESIGN STANDARDS DO NOT FULLY ADDRESS ISSUES AND TRADE-OFFS IN AUTOMATION AND COGNITIVE OVERLOAD.	IF MAN-MACHINE INTEGRATION WITH AUTOMATED SYSTEMS IS NOT FULLY DEVELOPED, SINGLE CREW MEMBER LAK MISSION ACCOMPLISHMENT AND SURVIVABILITY MILL BE GREATLY REDUCED.	ACCELERATE DEVELOPMENT OF CRITICAL INFORMATION PROCESSING TECHNOLOGIES. CONDUCT ANALYSIS, SILULATION AND EVALUATIONS TO ASSESS CAPABILITIES. REVISE HF DESIGN STANDARDS. DEVELOP EFFECTIVE TRAINING	X.	FSD

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y. Yeûr THX ISSUES DATA BASE LISTING OF MEMO FIELDS (Inster.prg)

1.1/7.1. O 1042 DOES THE SINGLE CREW MEMBER IF PART OF THE MISSION PERFORM AMALYSES, SIMULATION PM 01 11 MHEN RESOLVED RESPON-SIBLE AGENCY AND OPERATIONAL EVALUATION TO ASSURE THAT THE SYSTEM DESIGN PROVIDES SUFFICIENT FLEXIBILITY FOR MISSION SUCCESS. PROPOSED SOLUTION UNABLE TO COMPLETE THE MISSION AND/OR RETURN HOME. EQUIPMENT CAPABILITY IS DISABLED, THE PILOT MAY BE FLEXIBILITY TO REACT TO MISSION MODES, AND EFFECTIVELY PERFORM CHANGES, DEGRADED EQUIPMENT DESIGN ALLOW THE PILOT THE ALLEN DERIVED ISSUE STATEMENT THE MISSION? 153u£ 000£ QUESTION NO CRITICAL

CONDUCT ASSESSMENT/DEMON-STRATION OF THE CONCEPT TO VALIDATE MANAGEABLE PILOT WORKLOAD. ATTENTION ON DATA ENTRY INSIDE THE COCKPIT WHEN HE SHOULD BE CONCENTRATING AVIATOR MAY NEED TO FOCUS C1044 HOW CAN IN-FLIGHT DATA ENTRY SYSTEMS REDICE MORKLOAD TO LEVELS REQUIRED FOR SUCCESSFUL OPERATIONS?

PRIOR TO FSD

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OUTSIDE.

01045 CAN TECHNOLOGY ACCOMPLISH
THE AUTOMATIC FLIGHT CONTROL
HHICH IS CRITICAL TO SINGLE
CREW MEMBER OPERATION?
SINGLTANEOUSLY.

1.16

DETERMINE ACTUAL CAPABILITIES
OF PROPOSED FLIGHT CONTROL
AUTOMATION AND EVALUATE THE
CAPABILITY TO ACHIEVE SINGLE CREM
MEWBER GOALS.

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THX ISSUES DATA BASE LISTING OF MEMO FIELDS (lister pry) RESOLVED

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AGENCY SIBLE 푼 톲 DEVELOPMENT OF REQUIRED SENSOR AND SHOULD BE ESTABLISHED PRIOR TO FSD. EVALUATE THE EFFECTIVENESS OF THE OF AVAILABLITY AND EFFECTIVENESS DISPLAY TECHNOLOGIES. ASSURANCE AVIATOR FLYING THE LHX USING A 'SIDE-ARM-CONTROLLER' MHILE CONCURRENTLY CONTROLLING OTHER ACCELERATE THE HIGH RISK AIRCRAFT FUNCTIONS. PROPOSED SOLUTION COMPLETION WILL BE SEVERELY DEGRADED AT NIGHT AND IN ADVERSE WEATHER. EFFECTIVE PILOT PERFORMANCE
AND MISSION ACCOMPLISHMENT DEPENDS
UPON WORKLOAD REDUCTION WITHOUT THIS CAPABILITY, MISSION IMPACT AIRCRAFT WITH A "SIDE-ARM-CONTROLLER" AND CONTROLLING OTHER FUNCTIONS AT CONDITIONS, WHICH REQUIRES A WIDE SENSITIVITY AND RESOLUTION, IS A THE SAME TIME HAS NOT SEEN FULLY MORKLOAD RELATED TO FLYING THE AT NIGHT AND IN ADVERSE MEATHER 01049 THE SYSTEM FOR NAVIGATING NOE FIELD OF VIEW WITH SUITABLE 01048 THE HUMAN INTERACTION AND HIGH RISK DEVELOPMENT ISSUE STATEMENT ALLEN DERIVED ASSESSED 155Ut CODE QUESTION NO. 1.18/7.08 CRITICAL - 1

P3I PROGRAM P31 PROGRAM ₹ ₹. UNKNOMN UNKNOWN ABSENCE OF EITHER OR BOTH SYSTEMS MAY RESULT IN MISSION DEGRADATION. ABSENCE OF EITHER OR BOTH SYSTEMS MAY RESULT IN MISSION DEGRADATION 01059 CAN SINGLE PILOT OPERATION BE ACHIEVED C.059 CAN SINGLE PILOT OPERATION BE ACHIEVED MITHOUT MILLIMETER MAVE RADAR & INTEGRATED COMMUNICATION, NAVIGATION, IDENTIFICATION AVIONICS? NAVIGATION, IDENTIFICATION AVIONICS? MITHOUT MILLIMETER WAVE RADAR & INTEGRATED COMMUNICATION, 30. 1.20R

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OPTIMUM DESIGN OF CREM STATION DEFINITION OF JOB AND PERSONNEL QUALIFICATION, AND DEVECOMENT OF APPROPRIATE TRAINING

ISSUE IMPACTS ON CREW STATION DESIGN, ON PERSONNE: AND TRAINING, UNIT MANNING AND ULTIMATELY, ON MISSION PERFORMANCE

DIGSA WHAT ARE THE CREW STATION DESIGN

CRITERIA FOR THE LHX-UTILITY?

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# 12. 13. THA 15SUES DAIA BASE LISTING OF MEMO FIELDS (Inster prg)

RESPOM- WHEN SIBLE RESOLVED AGENCY	P31 PROGRAM	XC PRIOR TO 01 11	113 OT 11	DOC PRIOK 10 01 11
RESPON SIBLE AGENCY	We	CONDUCT AN IN DEPIH ASSESSMENT OF THE AIRCREM AND MAINTAINER NEEDS AND ESTABLISH DETAILED REQUIREMENTS FOR MISSION PLANNING AND MAINTENANCE MORK STATION CAPABILITIES.	DM-1LS NON-MAINTEMANCE TASKS IN STAFFING FOR MAINTEMANCE IN UM.15.	TRADOC CONDUCT AN IN DEPTH ASSESSMENT OF THE AIRCREM AND MAINTAINER NEEDS AND ESTABLISM DETAILED REQUIREMENTS FOR MISSION PLANNING AND MAINTENANCE HORK STATION CAPABILITIES.
PROPOSED SOLUTION	NONE	CONDUCT AN IN DEPTH ASSESSMENT DF THE AIRCREM AND MAINTAINER AND ESTABLISH DETAILED REQUIRE FOR MISSION PLANNING AND MAINT MORK STATION CAPABILITIES.	GIVE APPROPRIATE ATTENTION TO NON-MAINTENANCE TASKS IN STAF FOR MAINTENANCE IN UNITS.	CONDUCT AN IN DEPTH ASSESSMENT OF THE AIRCREW AND MAINTAINER AND ESTABLISH DETAILED REQUIRE FOR MISSION PLANNING AND MAINTI
IMPACI	ABSENCE UF EITHER OR BOTH SYSTEMS MAY RESULT IN MISSION DEGRADATION.	COMBAT EFFECTIVENESS OF LHX WILL BE HIGHLY DEPENDENT ON GROUND FACILITIES FOR MISSION PLANNING AND MAINTENANCE	UNDERESTIMATED MANPOWER REQUIREMENTS CAUSE INADEQUATE TRAINING SUPPORT STRUCTUR. 10 BE INITIATED AND CAN CREATE A. EEVERAL YEAR LAG IN RECRUITING.	COMBAT EFFECTIVENESS OF LHX WILL BE HIGHTY DEPENDENT ON GROUND FACILITIES FOR RISSION PLANNING AND MAINTENANCE.
ISSUE ALLEM DERIVED CODE ISSUE STATEMENT	1.20R - 0.10.59 CAN SINGLE PILOT OPERATION BE ACHIEVED ABSENCE UF EITHER OR BOTH SYSTEMS NOWE .  LITROUT MILLIMETER MAVE RADAR MAY RESULT IN MISSION DEGRADATION  LITRORATED COMMUNICATION.  MAVIGATION, IDENTIFICATION AVIONICS?	O1037 FULL CAPABILITIES AND REQUIREMENTS AND HUMAN FACTORS AND TRAINING COMSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	MIDIG THE AMOUNT OF NON-MAINTENANCE TASKS PER INDIVIOUAL MAINTAINER MAY INCREASE AS THE MAINTENANCE POPULATION DECREASES.	M1006 FULL CAPABILITIES AND REQUIREMENTS AND HUMAN FACTORS AND TRILINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASEO MISSION PLANNING AND MAINTENANCE ACTIVITIES.
CRITICAL QUESTION NO	1.08	1.218/4.148	2 01/6 03	2 04/3.02/1.21R

# THE 19SOLS DATA BASE (1911NG OF MEMO FIELDS)

F. 4.3.7

CRITICA. QUESTION NO		ALLEN DERIVES ISSUE STATEMENT	IMPACT	PROPOSED SOLUTION	RESPON- STBLE AGENCY	WHEN RESOLVED
2 04/3 02/1 21R/4 14R		FULL CAPABILITIES AND REQUIREMENTS AND HUMAN FACTORS AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES	COMBAT EFECTIVENESS OF LAX WILL BE HIGHLY DEPENDENT ON GROUND FACILITIES FOR MISSION PLANNING AND MAINTENANCE	COMBBAT EFFECTIVENESS OF LHX WILL CONDUCT AN IN DEPTH ASSESSMENT REQUIREMENTS AND HUMAN FACTORS BE HIGHLY DEPENDENT ON GROUND OF THE AIRCREM AND MAINTAINER NEEDS AND TRAINING CONSIDERATIONS HAVE FROM TRAINING CONSIDERATIONS HAVE FROM TISSION PLANNING AND MAINTENANCE BASED MISSION PLANNING AND MAINTENANCE MAINTENANCE MAINTENANCE ACTIVITIES  MAINTENANCE	18A DOC	PRIOR 10 01 11
2 04/3 02/4 148	M:022 FULL CAPABILITIES AND REQUIREMENTS AND HUMA AND TRAINING COMSIDER NOT BERA DEFINED FOR BASED MISSION PLANNIN MAINTEMANCHE ACTIVITI	FULL CAPABILITIES AND REQUIREMENTS AND HUMAN FACTORS AND TRAINING CONSIDERATIONS HAVE AND BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTEMANCHE ACTIVITIES	COMBAT EFFECTIVENESS OF LAX WILL BE HIGHLY DEPENDENT ON GROUND FACILITIES FOR MISSION PLANNING AND MAINTENANCE.	CCMDUCT AN IN DEPTH ASSESSMENT OF THE AIRCREM AND MAINTAINER NEEDS AND ESTABLISH DETAILED REQUIREMENTS FOR MISSION PLANNING AND MAINTENANCE AORK STATION CAPABILITIES.	TRADOC	PRIOR TO 01 11
2 05R	M:DDZ CAN ALL UNI BE PERFORM: MOS INCLUDI	MIDDZ CAN ALL UNIT MAINTENANCE FUNCTIONS BE PERFORMED BY NO MORE THAN THREE MUS INCLUDING CREM CHIEF?	POTENTIAL DESIGN TRADE-OFFS IMPACT ON MOS DETERMINATION. FOTENTIAL IMPACT ON TRAINING UNIT MANNING AND FORCE STRUCTURE.	MONITOK AIRCRAFT DESIGN. PERFORM TASK & SKILL AMALYSIS. INCLUDE IN QQPRI.	PP/ILS	PRIOR TO FSD
3 02/1.218/4 14K	01037 FULL CAPABILITIES AND REQUIRMENTS AND HUMA AND TRAINING CONSIDER NOT BEEN DEFINED FOR T BASED MISSION PLANNIN MAINTENANCE ACTUTIES	FULL CAPABILITIES AND REQUIREMENTS AND HUMAN FACTORS REQUIREMENTS CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUIER BASED MISSION PLANNING AND MAINTEAMF ACTIVITIES	COMBAT EFFECTIVENESS OF LHX WILL BE HIGHLY DEPENDENT ON GROUND FACILITIES FOR MISSION PLANNING AND WAINTENANCE	CONDUCT AN IN DEPTH ASSESSMENT OF THE ATRCREM AND MAINTAINER MEEDS AND ESTABLISH DETAILED REQUIREMENTS FOR MISSION PLANNING AND MAINTENANCE HORN STATION CAPABILITIES.	TRADOC	PRIOR TO 01 :1

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THX 1850ES WATA BASE LISTING OF MEMO FIELDS (inster prg)

KESPUN- S18LE AGENCY	ARTI RESULTS. ARMY/MASA CREM STATION SIMULATION STUDIES	(UNKNOWN)  TRADOC PRIOR TO FSD	ARTI RESULTS. ARMY/NASA CREW PM/HEL REP STATION SIMULATION STUDIES.	(UNKNOMN)  TRADOC PRIOR TO FSD
IMPAC1	IMPACI ON FEASIBILITY OF ARTI RESULTS. ARMY/NASA CREM SINGLE PILOT OPERATION STATION SIMULATION STUDIES	THE PROPOSED LHX IS A HIGHLY COMPLEX WEAPONS SYSTEM PLATFORM AND MAY REQUIRE APTITUDES THAT ARE NOT AVAILABLE IN SUFFICIENT QUANTITY AMNOG THE POPULATION THAT FEEDS THE PILOT POOL. IF THIS IS TRUE, THEN PILOTS WITH LOWER APTITUDES WOULD HAVE TO BE ACCESSED AND TRAINING TIME AND COSTS INCREASED CORRESPONDINGLY.	IMPACT ON FEASIBILITY OF SINGLE PILOT OPERATION	THE PROPOSED LHX IS A HIGHLY COMPLEX MEAPONS SYSTEM PLATFORM AND MAY REQUIRE APTITUDES THAT ARE NOT AVAILABLE IN SUFFICIENT QUANTITY AMONG THE POBULATION THAT FEEDS THE PILOT POOL. IF THIS IS TRUE, THEN PILOTS WITH COMPRE APPLITODES MOULD MARE TO BE
15SUE ALLEN DERIVED CODE 15SUE STATEMENT	3 03/3 04 DERFORMANCE REQUIREMENTS FOR LHX COMPARE WITH THOSE OF AIRCRAFT BEING REPLACEO OR OTHER AIRCRAFT IN THE DOD INVENTORY?	O1903 CAN THE AVAILABLE OPERATORS (FILOTS) BE SUCCESSFULLY TRAINED WITHIN THE TIME, COST OF CURRENT SYSTEMS, AND WITHOUT INCREASING THE CURRENT TRAINING FACILITIES?	01058 HOW DO PSYCHOMOTOR AND COGNITIVE PERFORMANCE REQUIREMENTS FOR LHX COMPARE WITH THOSE OF AIRCRAFT BEING REPLACED OR OTHER AIRCRAFT IN THE DOD INVENTORY?	01003 (APTITUDES) CAN THE AVAILABLE OPERATORS (PILOTS) BE SUCCESSFULLY TRAINED WITHIN THE TIME, COST OF CURREN SYSTEMS, AND WITHOUT INCREASING THE CURRENT TRAINING FACILITIES?
CRITICAL QUESTION NO.	3 03/3 04	3 03/3.04/4.0	3 04	3 04/4.0

THX ISSUES DATA BASE LISTING OF MEMO FIELDS (lister prg)

CRITICAL QUESTION NO.	GRITICAL 158/6 ALLEN DERIYED QUESTION NO. CODE 158UE STATEMENT		PROPOSED SOLUTION	RESPON- SIBLE AGENCY	WHEN RESOLVED
10 7	01002 (SCAT) HOW CAN SCAT TRAINING BE DONE AT THE UNIT LEVEL WITHOUT PROHIBITIVELY EXPENSIVE FIELDING TO UNITS OF A 2-PLACE LHX MODIFI- CATION?	A 2 PLACE AIRCRAFT PERMITS  THE INSTRUCTOR TO OVER RIDE THE STUDENT WHEN STUDENT GETS INTO TROUBLE. A SINGLE PLACE LHX LACKS THIS SACKUP, RESULTING IN UNRECOVERBLE ERRORS, LOSS OF ALRORAFT AND LIFE.	(имкионе)	TRA DOC	TOA AP U VOL IX TNG
4.02/5.01	N1008 WHAT IS THE IMPACT OF METRIC MEASURE ON MAINTENANCNE AND MAINTENANCE TRAINING?	USE OF METRIC MEASURE COULD PROVE COSTLY AND DELAY THE REPAIR PROCESS ESPECIALLY IF LHX CONTAINS A MIX OF METRIC AND STANDARD SIZES.	CONDUCT PERFORMANCE ANALYSIS TO DETERMINE OVERALL SIGNIFICANCE OF USING METRIC MEASURE. PROVIDE APPROPRIATE TRAINING.	æ	II 10
<u> </u>	01051 WHAT ARE THE UNIT TRAINING REQUIREMENTS FOR OPERATORS AND MAINTAINERS IN TERMS OF INITIAL SKILLS, REQUALFICATION AND TACTICAL TRAINING?	LESS THAN ADEQUATE TRAINING AT THE UNIT LEVEL WILL REDUCE COMBAT EFFECTIVENESS.	CONTINUE ONGOIMG ANALYSIS AND RESOLVE ISSJE PRIOR TO FSD.	TRA DOC	PRIOR TO FS5
<b>4</b> 03	MIDIO MHAT ARE THE UNIT TRAINING REQUIREMENTS FOR OPERATORS AND MAINTAINERS IN TERMS OF INITIAL SKILLS, REQUALIFICATION AND TACTICAL TRAINING?	LESS THAN ADEQUATE TRAINING AT THE UNIT LEVEL WILL REDUCE COMBAT EFFECTIVENESS.	CONTINUE ONGOING ANALYSIS AND RESOLVE ISSUE PRIOR TO FSD.	TRABOC	PRIOR 10 FSD
£3 <b>*</b>	S1003 WHAT ARE THE UNIT TRAINING REQUIREMENTS FOR OPERATORS AND WAINTAINERS IN TERMS OF INITIAL SKILLS, REQUALIFICATION AND TACTICAL TRAINING?	LESS THAN ADEQUATE TRAINING AT THE UNIT LEVEL MILL REDUCE COMB4T EFFECTIVENESS.	CONTINUE ONGOING ANALYSIS AND RESOLVE ISSUE PRIOR TO FSD.	1441 90	PR10R 10 FSE

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LISTING OF MEMO FIELDS (1) ISSUES DATA BASE LISTING OF MEMO FIELDS (1) Ster prg.)

CRETICAL QUESTION NO.	185UE CODE	ALLEN DERIVED ISSUE STATEMENT	IMPACT	PROPUSED SOLUTION	RESPON- SIBLE AGENCY	MHEN RESOLVED
4 04/4 05	호 로 등 5:01 15	MID'S WHAT IMPACT DOES TWO LEVEL  AND UNIT LEVEL MAINTEMANCE TRAINING  DURING LHX "PHASE IN" PERIOD AND WHEN  STEADY S"ATE CONDITIONS ARE R.ACHED?	4 C4/4 C5 M 1015 WH,T IMPACT DOES TWO LEVEL TWO LEVEL TWO LEVEL TWO LEVEL MAINTENANCE FAVE ON INSTITUTIONAL UNIT TRAINING BURDEN DURING PHASE-IN. TWO LEVEL MAINTENANCE (STEA, ICTP., PM/ILS PRIOR TO PRODUCTION AND UNIT LEVEL MAINTENANCE TRAINING ADDITIONAL LHX REQUIREMENTS MAY ISSUE PRIOR TO FSD.  STEADY S'ATE CONDITIONS ARE R.ACHED?	COMPLETE ONGOING ANALYSES (CTEA, 1CTP. TWO LEVEL NAINTENANCE) AND RESOLVE ISSUE PRIOR TO FSD.	511/Md	PRIOR TO PRODUCTION
49 50	李 S 101 *	MIGIS WHAT IMPACT DOES TWO LEVEL MAINTENANCE HAVE ON INSTITUTIONAL AND UNIT LEVEL MAINTENANCE TRAINING DURING LHX "PHASE IN" PERIOD AND WHEN STEADY STATE CONDITIONS ARE REACHED?	TWO LEVEL MAINTENANCE MAY INCREASE UNIT TRAINING BURDEN DURING PHASE-IN ADDITIONAL LINK REQUIREMENTS MAY INCREASE SELECTED MOS TRAINING	COMPLETE ONGOING ANALYSES (CTEA, ICTP., TWO LEVEL MAINTENANCE) AND RESOLVE 1.SSUE PRIOR TO FSP.	PM/1LS	PRIOR 10 PRODUCTION
9 0 ₹	01052 '5	01052 'S THE TRAINING PLAN ADEQUATE TO SUPPORT LHX FIELDING AT THE PROJECTED RATE?	MISMATCH BETWEEN AVAILABILITY OF AIRCRAFT AND AVAILABILITY OF TRAINED PERSONNEL CAN DELAY LHX DEPLOYMENT.	COMPLETE DNGOING ANALYSES (BOIP, ICPP, CONTRACTORS) AND RESOLVE ISSUE PRIOR TO FSD.	PM/TRADOC	PM/TRADOC PRICH TO FSD
\$0 <b>\$</b>	21 (101 <b>m</b>	MIDII IS THE TRAINING PLAN ADEQUATE 10 Support LHX FIELDING AT THE PROJECTED RATE?	MISMATCH BETMEEN AVAILABILITY OF AIRCRAFT AND AVAILABILITY OF TRAINEO PERSONNEL CAN DELAY LHX DEPLOYMENT.	COMPLETE ONGOING ANALYSES (BOIP, ICTP, CONTRACTORS) AND RESOLVE ISSUE PRIOR TO FSE	P#/TRADOC	PM/TRADOC PRIOR TO FSD

LHX 1SSUES DATA BASE LISTING OF MEMD FIELDS (1) Ster org)

CRITICAL QUESTION NO	153UE CO <b>DE</b>	ALLEN DERIVES ISSUE STATEMENT	IMPACT	PROPOSED SOLUTION	RESPON- SIBLE AGENCY	WHEN RESOLVED
90 *	15 1 100 ( S	S1004 IS THE TRAINING PLAN ADEQUATE TO SUPPORT LHX F'SLDING AT THE FROJECTED RATE?	MISMATCH BETWEEN AVAILABILITY OF AIRCRAFT AND AVAILABILITY OF TRAINED PERSONNEL CAN DELAY LHX DEPLOYMENT.	4 06 S1004 IS THE TRAINING PLAN ADEQUATE WISMATCH BETWEEN AVAILABILITY OF COMPLETE ONCOING ANALYSES (BOIP, 10 SUPPORT LHX F'3LDING AT THE AIRCRAFT AND AVAILABILITY OF TRAINED ICTP, CONTRACTORS) AND RESOLVE FROJECTED RATE? PROJECTED RATE?	PM/TRADOC	PM/TRADOC PRIOR TO FSD
÷.67	01050 AS TI CURRI REPL PROGE ESTAK	O1050 AS THE LHX ENTERS THE INVENTORY CURRENT TRAINING AIRCRAFT MAY BE REPACED BY LHX. THE LHX TRAINING PROGRAM/SYSTEM/AIRCRAFT SHOULD BE ESTABLISHED TO INCLUDE IERM.	DESIGNATING THE LHX AS PRIMARY TRAINER FOR ALL IERW ERRLIER IN THE PROGRAM MAY DECREASE LONG TERM TRAINING COSTS.	COMPLETE ONGOING ANALYSIS (CTEA) AND RESOLVE ISSUE PRIOR TO FSED.	TRADOC	PR10R 10 FS0
30 <b>3</b>	3.054 MILL OF CC EMBET FOR :	3.054 MILL THE LHX DESIGN TAKE ADVANTAGE OF COMPUTER ASSISTED TRAINING EMBEDDED TRAINING) TECHNOLOGIES FOR INITIAL AND UNIT TRAINING?	ADVANCES IN TRAINING TECHNOLOGY MAY REDUCE INSTRUCTOR REQUIREMENTS, IMPROVE TRAINING QUALITY CONTROL REDUCE INITIAL TRAINING TIME AND IMPROVE TRAINING IN UNITS.	COMPLETE ONGOING AMALYSES (CTEA. COMTRACTOR) AND RESOLVE ISSUE PRIOR TO FSED.	¥.	55
80	M1013 WILL OF CC EMBEI FOR 1	MIDI3 MILL THE LHX DESIGN TANE ADVANTAGE OF COMPUTER ASSISTED TRAINING EMBEDDED TRAINING) TECHNOLOGIES FOR INITIAL AMD UNIT TRAINING?	ADVANCES IN TRAINING TECHNOLOGY MAY REDUCE INSTRUCTOR REEQUIREMENTS, IMPROVE TRAINING QUALITY CONTROL REDUCE INITIAL TRAINING TIME AND IMPROVE TRAINING IN UNITS.	COMPLETE ONGOING ANALYSES (CTEA, CONTRACTOR) AND RESOLVE ISSUE PRIOR TO FSD.	<b>X</b>	FSD

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LHX 15SUES DATA BASE LISTING OF MEMU FIELGS (lister prg)

4 08/4 129 OUNCAN THE USE OF NEW TECHNOLOGY POTENTIAL FOR IMPROVED TRAINING (UNKNOWN) TRADE PUBLICATION OF CTEA RESOLVED RESPON-SIBLE AGENCY PROPOSED SOLUTION IN LESS TIME AND LOWER COSTS IMPACT 31020 HOW CAN THE USE OF NEW TECHNOLOGY SIMPLIFY AND REDUCE TRAINING REQUIRMENTS? ISSUE STATEMENT ALLEN DERIVED 1355E CODE QUESTION NO. CRITICAL

PRIOR 10 01 11 PRIOR TO 0T 11 PRIOR TO FSD PM-1LS PM/11.S TRADOC CONTINUE ASSESSMENT BEYOND CONCEPT DEVELOPMENT UNTIL NEEDED INFORMATION IS AVAILABLE. PERFORM MONITOR AIRCRAFT DESIGN. PERFOR TASK & SKILL ANALYSIS. INCLUDE MAINTENANCE TRAINING REQUIREMENTS CANNOT YET BE FIRMLY STATED. POTENTIAL DESIGN TRADE-OFFS.
IMPACT ON MOS DETERMINATION.
POTENTIAL IMPACT ON TRAINING
UNIT MANNING AND FORCE
STRUCTURE. ISSUE IMPACTS ON CREW STATION ARE COMPLICATED BY THE PROSPECT OF ALTERATIONS IN MAINTENANCE MOS'S 2-LEVEL MAINTENANCE AND HARDWARE M1002 CAN ALL UNIT MAINTENANCE FUNCTIONS
BE PERFORMED BY NO MORE THAN THREE
MOS INCLUDING CREM CHIEF? MIDIB ANALYSES OF MAINTENANCE TRAINING MNOVATIONS 4.09/2.05R 4. 10R **5**0 **7** 

01 11 TRADCC OPTIMUM DESIGN OF CREM STATION, DEFINITION OF JOB AND PERSONNEL QUALIFICATION, AND DEVELOPMENT OF APPROPRIATE TRAINING (UNKNOMN) DESIGN, ON PERSONNEL AND TRAINING, UNIT MANNING AND ULTIMATELY, ON MISSION PERFORMANCE APPROPRIATE TRAINING CAN IMPROVE PILOT'S PERFORM-ANCE UNDER HIGH WORKLOAD CONDITIONS 01032 WMAT ARE THE TRAINING REQUIREMENTS FOR THE SECOND CREM MEMBER IN THE UTLLITY AIRCRAFT? WHAT ARE THE CREM STATION DESIGN CRITERIA? 01019 CAN TRAINING INCREASE THE SCAT PILOT'S ABILITY TO PERFORM UNDER HIGH TASK LOADING? 4.118

THE ISSUES DATA BASE LISTING OF MEMO FIELDS (lister prg)

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CRITICAL QUESTION NO.	- 0	IMPACT	PROPOSED SOLUTION	RESPON- SIBLE AGENCY	MHEN RESOLVED
4 128	ı	DIDOD HOW CAN THE USE OF NEW TECHNOLOGY POTENTIAL FOR IMPROVED TRAINING (UNKNOWN) TRADOC SIMPLIFY AND REDUCE TRAINING IN LESS TIME AND LOWER COSTS REQUIRMENTS?	(UNKAIONN)	TRADOC	PUBL ICATION OF CTEA
. I 3R	01057 MHAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF OTHER AIRCRAFT STATIONED MITH THE LHX?	MITHOUT ADEQUATE ATTENTION TO THE IMPACT OF LHX INTEGRATION INTO UNITS, UNIT EFFECTIVENESS MAY SUFFER (A)	CONTINUE ANALYSIS FROM TOTAL SYSTEM PERSPECTIVE TO ENSINE THAT UNNECESS- ARY REDUNDANCIES AND CRITICAL TRAINING VOIDS ARE AVOIDED.	TRADOC	PRIOR TO FIELDING
138	M1024 WHAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF OTHER AIRCRAFT STATIONED MITH THE LHX?	MITHOUT ADEQUATE ATTENTION TO THE IMPACT OF LHX INTEGRATION INTO UNITS, UNIT EFFECTIVENESS MAY SUFFER (A).	CONTINUE ANALYSIS FROM TOTAL SYSTEM PERSPECTIVE TO ENSURE THAT UNNECESS- ARY REDUNDANCIES AND CRITICAL TRAINING VOIDS ARE AVOIDED.	1RA00C	PRIOR TO FIELDING
138	S1008 WHAT ARE THE TRAINING REQUIRENENTS 0F OTHER AIRCARF! (AVIATORS, CREWS, NAINTENANCE) STATIONED WITH THE LHX?	MITHOUT ADEQUATE ATTENTION TO THE IMPACT OF LHX INTEGRATION INTO UNITS, UNIT EFFECTIVENESS MAY SUFFER (A)	CONTINUE ANALYSIS FROM TOTAL SYSTEM PERSPECTIVE TO ENSURE INAT UNNECESS- ARY REDUNDANCIES AND CRITICAL TRAINING VOIDS ARE AVOIDED.	TRADOC	PRIOR TO FIELDING
. 14. A. 14.	O1037 FULL CAPABILITIES AND REQUIREMENTS AND HUMAN FACTORS AND TRAINING CONSIDERATIOMS HAVE NOT BREN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	COMBAT EFFECTIVENESS OF LHX WILL BE HIGHLY DEFENDENT ON GROUND FACILITIES FOR MISSION PLANNING AND MAINTENANCE	CONDUCT AN IN DEPTH ASSESSMENT OF THE AIRCREM AND MAINTAINER NEEDS AND ESTBALLED REQUIREMENTS FOR MISSION PLANNING AND MAINTENANCE HORK STATION CAPABILITIES.	TRADOC	PRIOR TO OF 11
5.01	M1008 WHAT IS THE IMPACT OF METRIC MEASURE ON MAINTENANCNE AND MAINTENANCE TRAINING?	USE OF METRIC MEASURE COU_D PROVE COSTLY AND DELAY THE REPAIR PROCESS ESPECIALLY IF LHX CONTAINS A MIX OF METRIC AND STANDARD SIZES.	CONDUCT PERFORMANCE ANALYSIS TO DETERMINE OVERALL SIGNIFICANCE OF USING METRIC MEASURE. PROVIDE APPROPRIATE TRAINING.	¥.	11

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CHX ISSUES DATA BASE LISTING OF MEMU FIELUS (lister prg)

CRITICAL QUESTION NO	I SSUE CODE		IMPACT	_	RESPON- SIBLE AGENCY	
2 05	01047 AN	5 02 01047 AN INTEGRATED APPROACH TO CREW STATION LIGHTING FOR WAINTENANCE AND FARP HAS NOT BEEN FULLY EVALUATED	CREWSTATION, MAINTENANCE AND FARP LIGHTING HAVE A CRITICAL IMPACT ON THE AIRCREW'S ABILITY TO ACCOMPLISH THE COMBAT MISSION. TO INSUIT	PERFORM CREWSTATION LIGHTING ANALYSIS THAT ADDRESSES THE UNIQUE ASPECT OF CREW STATION EQUIPMENT AND PROTECTIVE DEVICES. INCLUDE MAINTENANCE AND FARP ACTIVITIES TO INSURE A FULLY INTEGRATED SYSTEM FOR LHX.	11 11 11 10 10 10 10 10 10 10 10 10 10 1	F50
5.03	M1009 AN STJ L14	M1009 AN INTEGRATED APPROACH TO CREW STATION LIGHTING IS NEEDED. LIGHTING FOR MAINTENANCE AND FARP HAS NOT BEEN FULLY EVALUATED.	CREWSTATION, MAINTENANCE AND FARP LIGHTING HAVE A CRITICAL IMPACT ON THE AIRCREM'S ABILITY TO ACCOMPLISH THE COMBAT MISSION.	PERFORM CREMSTATION LIGHTING ANALYSIS THAT ADDRESSES THE UNIQUE ASPECT OF CREM STATION EQUIPMENT AND PROTECTIVE DEVICES. INCLUDE MAINTENANCE AND FARP ACTIVITIES TO INSURE A FULLY INTEGRATED SYSTEM FOR LHX.	£	FSD
<b>30 c</b>	S1002 AN S1, LE	SIOOZ AN INTEGRATED APPROACH TO CREW STATION LIGHTING IS NEEDED. LIGHTING FOR MAINTENANCE AND FARP HAS NOT BEEN FULLY EVALUATED.	CREWSTATION, MAINTENANCE AND FARP LIGHTING HAVE A CRITICAL IMPACT ON THE AIRCREM'S ABILITY TO ACCOMP. IS- THE COMBAT MISSION.	PERFORM CREMSTATION LIGHTING ANALYSIS THAT ADDRESSES THE UNIQUE ASPECT OF CREM STATION EQUIPMENT AND PROTECTIVE DEVICES. INCLUDE MAINTENANCE AND FARP ACTIVITIES TO INSURE A FULLY INTEGRATED SYSTEM FOR LHX	£.	FS0
5 05/5.06/5.07/5.08	00 110 00 COU	PIOTZ DOES THE LHX SYSTEM DESIGN ADEQUATELY CONSIDER HUMAN FACTORS IN MAINTENANCE (E.G. ACCESSIBILITY, PROTECTIVE CLOTHING COMPOSITE MATERIAL REPAIR, ETC)?	FAILURE TO DESIGN FOR EASE OF MAINTENANCE UNDER ADVERSE OPER-ATIONAL CONDITIONS AND ENVIRON-MENTS CAN DEGRADE SYSTEM AVAILABILITY, INCREASE MAINTENANCE TRAINING TIME, AND INCREASE MENTAL CATEGORY REQUIREMENTS FOR SPECIFIC MOS'S.	CONDUCT EARLY ANALYSIS TO RESOLVE ISSUE.	ž. č.	PRIOR TO FSD
5 05 7 03	M1003 WBI	M1003 MBC AND COLD MEATHER PROTECTIVE CLOTHING CAN HAVE AN ADVERSE IMPACT ON SOLDIER PERFORMANCE.	POTENTIAL REDUCTION IN SOLDIER PERFORMANCE AND MISSION SUCCESS.	ASSURE THAT THE LHX DESIGN 1S COMPATIBLE WITH PROTECTIVE CLOTHING. PLACE HIGH PRIORITY ON NBC/COLD WENTHER EQUIPMENT DEVELOPMENT.	æ	11 10

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LHX ISSUES DATA BASE LISTING OF MEMO FIELDS (lister.prg)

MHEN RESOLVED	PRIOR 10 FS0
RESPON- S18i.e AGENCY	₹.
RESPON- MHEN QUESTION NO CODE ISSUE STATEMENT IMPACT PROPOSED SOLUTION AGENCY	CONDUCT EARLY ANALYSIS TO RESOLVE 155UE.
IMPACT	FAILURE TO DESIGN FOR EASE OF MAINTENANCE UNDER ADVERSE OPERATIONAL CONDITIONS AND ENVIRONMENTS CAN DEGRADE SYSTEM AVAILABILITY, INCREASE MAINTENAL TAKING TIME, AND INCREASE MENTAL CATEGORY REQUIREMENTS FOR SPECIFIC MOS'S.
E ALLEN DERIVED ISSUE STATEMENT	MIDIT DOES THE LAX SYSTEM DESIGN ADEQUATELY CONSIDER HUMAN FACTORS IN MAINTENANCE (E.G. ACCESSIBILITY, PROTECTIVE CLOTHING COMPOSITE NATERIAL REPAIR, ETC)?
3000 3000	M1017
CRITICAL QUESTION NO	5 07/5.08

PRIOR 10 550	START OF P31 P
g.	Æ.
CONDUCT EARLY ANALYSIS TO RESOLVE ISSUE.	ASSURE THAT THE KNOWN PREPLANNED PRODUCTION IMPROVEMENTS ARE INTEGRATED INTO THE LHX SYSTEM DESIGN.
FAILURE TO DESIGN FOR EASE OF MAINTENANCE UNDER ADVERSE OPER- ATIONAL COUDITIONS AND ENVIRON- MENTS CAN DEGRADE SYSTEM AVAIL- ABLITY, INCREASE MAINTENANCE TRAINING TIME, AND INCREASE MENTAL CATEGORY REQUIREMENTS FOR SPECIFIC MOS'S.	PILOT AND MAINTEMANCE WORKLOAD MUST NOT BE INCREASED AT THE EXPENSE OF MISSION PERFORMANCE
MIDIT DOES THE LAX SYSTEM DESIGN ADEQUATELY CONSIDER HUMAN FACTORS IN MAINTENANCE (E.G. ACCESSIBILITY, PROTECTIVE CLOTHING COMPOSITE MATERIAL REPAIR, ETC)?	01053 PRODUCT IMPROVEMENT MUST BE FULLY INTEGRATED TO ASSURE IMPROVED SYSTEM PERFORMANCE
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PROGRAM

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CHX ISSUES CATA BASE LISTING OF MEMO FIELDS (Pister prg)

CRITICAL QUESTION NO.	155JE ALLEN DERIVED CODE ISSUE STATEMENT	IMPACT		RESPON- S13LE AGENCY	WHEN RESOLVED
50 5	5 09 MIOTZ PRODUCT IMPROVEMENT M.ST BE PILCT AND MAINTENANCE WORKLOAD ASSURE PRODUCT SYSTEM PERFORMANCE EXPENSE OF MISSION PERFORMANCE INTO THE INTO THE INTO THE INTO THE INTO THE PRODUCT INTO THE INTO	PILCT AND MAINTENANCE WORKLOAD MUST NOT BE INCREASED AT THE EXPENSE OF MISSION PERFORMANCE	ASSURE THAS THE KNOWN PREPLANNED PRODUCTION IMPROVEMENTS ARE INTEGRATED INTO THE LHX SYSTEM DESIGN.	# C .	START OF P31 PROGRAM
5.10	S1005 REQUIRED TURN AROUND TIME IN FARP IS 15 MINUTES MITHOUT GHE. REARMING IS TO BE DONE MITH TWO SOLDIERS PER AIRCRAFT.	LESS THAM ADEQUATE TRAINING AT THE JULIT LEVEL WILL REDUCE COMBAT EFFECTIVENESS.	DESIGN LHX FUEL AND WEAPONS PLATFORM / INTERFACE TO ACHIEVE MISSION REQUIREMENTS CONSIDER AMMUNITION PACKAGING ENHANCE.	<b>₹</b> 3000 CE	01 11
\$1 \$	O1056 ANTHROPOMETRIC REQUIREMENTS HAVE NOT BEEN ESTABLISHED FOR THE LHX.	ANTHROPOMETRIC REQUIREMENTS HAVE A SIGNIFICANT EFFECT ON CONTROLS AND DISPLAYS, SEATING ADJUSTMENTS AND HELMET SIZING.	ANTHRODOMETRIC REQUIREMENTS ARE ESTABLISHED IN 1ST DRAFT RFP	Ā.	RFP
6.01/7.10	01024 FATIGUE, STRESS AND ANXIETY MAY DEGRADE SINGLE CREW MEMBER PER-FORMANCE ESPECIALLY IN DEGRADED MODES OF OPERATION.	FATIGUE/STRESS/ANXIETY HAVE GREATER IMPACT ON PERFORMANCE MITHOUT A 'BUDDY' PRESENT.	INTEGRATED, AUTOMATED COCKPIT DESIGN WORKLOAD EVALUATIONS, APPROPRIATE TRAINING	USAARL	07 11
31 61.2.1	01009 HOW SUCCESSFULLY DOES THE CURRENT LHX DESIGN DEAL WITH HUMAN FACTORS ISSUES IN COGNITIVE OVERLOAD AND PILOT FAITOUE DURING COMBAT OPERATIONS, CONTINUOUS OPERATION, AND NBC OPERATIONS?	COGNITIVE OVERLOAD. IF HUMAN FACTORS ARE NOT ADDRESSED IN THE FORM OF DESIGN CRITERIA, THE EFFECTIVENESS OF THE SYSTEM MAY S? SUFFER.	(ликиоми)	Z.	11 11

ink ISSUES DATA BASE (IS:iNG OF MEMO FIELDS (lister prg)

CRITICAL QUESTION NO.	ISSUE CODE	CRITICAL ISSUE ALLEN DERIVED QUESTION NO CODE ISSUE STATEMENT	IMPACT	PROPOSED SOLUTION	RESPON- SIBLE AGENCY	HHEN RESOLVED
	0.025 PRG VIEW	31025 PROLOWGED EXPOSURE TO MHOLE BODY VIBRATION MAY HAVE AN UNDESTRABLE IMPACT ON THE ATRCREM	EXCESSIVE VIBRATION LEVELS COULD DEGRADE CREM PERFORMANCE AND MISSION SUCCESS.	EXCESSIVE VIBRATION LEVELS COULD DESIGN LHX WITHIN LIMITS OF MIL-STD USAARL TT DEGRADE CREW PERFORMANCE AND 1472C, PARA 5.8.9.1.1 MISSION SUCCESS.	USAARL	11
	01026 CUR OFT HAV PER	O1026 CURRENT FIRE EXTINGUISHING SYSTEMS OFTEN USE HALON 1301 MAICH CAN HAVE ADVERSE HEALTH EFFECTS ON PERSONNEL.	HALON 1301 COULD HAVE AN IMPACT ON PERSONNEL WHEY USED IN CONFINED SPACES SUCH AS CREM STATIONS AND PASSENGER COMPARTMENTS	EVALUATE POTENTIAL FIRE EXTINGUÍSHING SYSTEMS TO ALLEVIATE HEALTH HAZAROS ASSOCIATEO MITH HALON 1301	¥	Ħ
	01027 JNA 0R 1 CREI COUI	G1027 INADEGUATE VENTILATION, HEATING OR COOLING COULD ADVENSELY AFFECT CREW AND PASSENGER PEFORWANCE AND COULD CREATE A HEALTH HAZARD.	TEMPERATURE EXTREMES AND/OR CONTAMINATION CAN IMPACT CREM AND PASSENGER PERFORMANCE	PROVIDE A HYBRID PRESSURIZED PROTECTIVE SYSTEM TO PREVENT ADVERSE EFFECTS ON ENVIRONMENTAL CONDITIONS AND/OR COMBAT CONTAMINATION.	¥	FSD
	01028 NBC CL0 IMP,	O1028 NBC AND COLD WEATHER FROTECTIVE CLOTHING CAN HAVE AN ADVERSE IMPACT ON SOLDIER PERFORMANCE.	POTENTIAL REDUCTION IN SOLDIER PERFORMANCE AND MISSION SUCCESS	ASSURE THAT THE LHX DESIGN 1S COMPATIBLE MITH PROTECTIVE CLOTHING. PLACE HIGH PRIORITY ON NBC/COLD MEATHER EQUIPMENT	<b>∓</b>	01 11

CHX ISSUES DATA BASE CISTING OF MEMO FIELDS (Tister prg)

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RESPON- WHEN SIBLE RESOLVED AGENCY	PM 01 1.1	PM PRIOR TO FSD	11 <b>W</b> c	T. T
PROPOSED SOLUTION	ASSURE THAT THE LHX DESIGN IS COMPATIBLE MITH PROTECTIVE CLOTHING. PLACE HIGH PRIORITY ON NEC/COLD MEATHER EQUIPMENT DEVELOPMENT.	DEFINE THE "MODIFIED" MIL-STD-1290 Criteria prior to start of FSED.	DESIGN LHX TO MEET APPROPRIATE NOISE LIMITS OF MIL-STD-1204, TE-MED-SCI AND MIL-STD-1474, PROVIDE AIR AND GROUND CREWS WITH HEARINE PROTECTION EQUAL TO OR BETTER THAN THE SPH-4 HELMET.	DESIGN LHX TO MEET APPROPRIATE NOISE LIMITS OF MIL-STD-1294, TB-MED-251 AND MIL-STD-1474, PROVIDE AIR AND GROUND CREWS MITH HEARING PROTECTION EQUAL TO OR BETTER THAN THE SPH-4
1MPAC1	POTENTIAL REDUCTION IN SOLDIER PERFORMANCE AND MISSION SUCCESS.	IMPROVED CRASHMORTHINESS WILL REDUCE INJURIES, DEATHS AND AIRCRAFT LOSSES	DEGRADED CREW PERFORMANCE AND/OR INJURY COULD ADVERSELY IMPACT MISSION ACCOMPLISHMENT.	DEGRADED CREW PERFORMANCE AND/OR INJURY COULD ADVERSLY IMPACT MISSION ACCOMPLISHMENT.
ISSUE ALLEM DEKIVED CODE ISSUE STATEMENT	1.33 MISO AND COLD MEATHER PROTECTIVE POTENTIAL REDUCTION IN SOLDIER ASSURE THAT THE LHX DESIGN IS PM 0T 11 CLOTHING CAN HAVE AN ADVERSE PERFORMANCE AND MISSION SUCCESS. CONTHING. PLACE HIGH PROTECTIVE IMPACT ON SOLDIER PERFORMANCE ON NBC/COLD MEATHER EQUIPMENT DEVELOPMENT.	O1029 CRASHWORTHINESS OF LHX IS DEFINED AS "MODIFIED" MIL-STO-1290, HOMEVER, EXTENT OF MODIFICATION IS UNDEFINED.	01030 SIEADY STATE AND IMPULSE NOISE LEVELS OF THE LHX MAY DEGRADE AIR AND GROUND CREMS' PERFORMANCE AND MAY POSE HEALTH HAZARGS	MIDDA STJADY STATE AND IMPULSE NOISE LEVELS Of the Lix may degrade air and ground Crems' Performance and may pose health Hazaros.
CRITICA. QUESTION NO	7 93	<b>7</b> 0 <b>4</b>	5 65	7 05

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## LHX ISSUES DATA BASE LISTING OF MEMO FIELDS (lister.prg)

CRITICAL QUESTION NO	ISSUE ALLEN DERIVED CODE ISSUE STATEMENT	IMPACT	PROPOSED SOLUTION	RESPON- SIBLE AGENCY	MHEN RESOLVED
90 4	01031 LASERS AND IR RADIATION CAN PRODUCE VISUAL DAMAGE DURING COMBAT AND TRAINING. BY AND MICROMAVE EXPOSURES ARE POTENTIAL HEALTH HAZARDS.	7 06 01031 LASERS AND 1R RADIATION CAN POTENTIAL AIR AND GROUND CREW EQUIPMENT SHOULD COMPLY WITH PM TI PRODUCE VISUAL DAMAGE DURING CASUALTIES AND DEGRADED MISSION MIL-STO 1425, AAG-46 AND COMBAT AND PERFORMANCE. SAFE NODE FOR USE DURING. HEALTH HAZARDS. SAFE OPERATION AND MAINTENANCE.	EQUIPMENT SHOULD COMPLY WITH MIL-STD 1425, AR40-46 AND AR40-583 LASERS SHOULD HAVE A SAFE MODE FOR USE DURING TRAINING. A ALK AND GROUND CREM TRAINING IN SAFE OPERATION AND MAINTENANCE.	E.	
7.06	M1005 LASERS AND IR RADIATION CAN PRODUCE VISUAL DATAGE DURING COMBAT AND TRAINING. RF AND MICROWAVE EXPOSURES ARE POTENTIAL HEALTH HAZAROS	POTENTIAL AIR AND GROUND CREW CASUALTIES AND DEGRADED MISSION PERFORMANCE	EQUIPMENT SHOULD COMPLY WITH MIL-STO 1425, AR40-46 AND AR40-883. LASERS SHOULD HAVE A SAF WOODE OF USE DURING TRAINING. AIR AND GROUND CREW TRAINING IN SAFE OPERATION AND MAINTENANCE.	£	E
7 0 7	01041 IS THE SINGLE CREMMEMBER LHX MORE OR LESS SURVIVABLE THAN A TWO CREMMEMBER AIRCRAFT?	MISSION ACCOMPLISHMENT AND REDUCTION OF AVIATION ASSET LOSSES DEPEND UPON HIGH SURVIVABILITY	PRIOR TO FINAL CREH COMPLEMENT DECISION, COMPLETE THE SURVIVABILITY ANALYSIS RELATED TO CREW SIZE AS PART OF THE TRADOC COEA.	ā.	ž.
7 08	O1049 THE SYSTEM FOR NAVIGATING NOE AT NIGHT AND IN ADVERSE WEATHER CONDITIONS, WHICH REQUIRES A WIDE FIELD OF VIEW WITH SUITABLE SENSITIVITY AND RESOLUTION, IS A HIGH RISK DEVELOPMENT.	WITHOUT THIS CAPABILITY, MISSION COMPLETION WILL BE SEVERELY DEGRADED AT NIGHT AND IN ADVERSE WEATHER.	ACCELERATE THE HIGH RISK DEVELOPMENT OF REQUIRED SENSOR AND DISPLAY TECHNOLOGIES. ASSURANCE OF AVAILABLITY AND EFFECTIVENESS SHOULD BE ESTABLISHED PRIOR TO FSD	ž.	550

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LMA 15846S (ATA 843: 1.1311A. DE MEMO PIELUS (Insteniony)

CRITICAL QUESTION NO	1SSUE CODE	CRITICAL 15SUE ALLEN DERIVED QUESTION NO CODE 15SUE STATEMENT	IMPACT	PROPOSED SOLUTION	RESPON- SIBLE AGENCY	RESOLVED
7 09	MID16 WILL FRO SuS' ADW AUCC	MIOLG WILL THE FATIGUE AND STRESS FROM THE MAINTENANCE BURGEN OF SUSTAINED CONTINUOUS OPERATIONS ADVERSELY AFFECT MISSION AUCOMPLISHMENT?	FAITGUE AND STRESS CAN INCREASE COMPLETE ONGOING ANALYSES (EG PW 01 II ERROR RAIES AND TIME TO ACCOMPLISH HARDWAN, LSA/LSAR, TWO LEVEL TASKS. EXCESSIVE FAITGUE AND SIRESS MAINTENANCE, CONTRACTOR TRAINING MAY ADVERSELY AFFECT MISSION ANALYSIS.) ACCOMPLISHMENT	COMPLETE ONGOING AMALYSES (EG HARDMAN, LSA/LSAR, TWO LEVEL MAINTENANCE, CONTRACTOR TRAINING AMALYSIS.)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	01 11
7 10	NO) 111d ISS: 14X	O1009 HOM SUCCESSFULLY DOES THE CURRENT LHX DESIGN DEAL WITH HUMAN FACTORS ISSUES IN COGNITIVE OVERLOAD AND PILOT FATIGUE DURING COMBAT OPERATIONS, CONTINUOUS OPERATION, AND NBC OPERATIONS?	COGNITIVE OVERLOAD. IF HUMAN FACTORS ARE NOT ADDRESSED IN THE FORM OF DESIGN CRITERIA, THE EFFECTIVENESS OF THE SYSTEM MAY SUFFER.	(UNKNOMN)	£	01 1:
2 6	01224 FAT 0EGI FORM	DITTA FATIGUE, STRESS AND ANXIETY MAY DEGRADE SINCLE CREW MEMBER PER- FORMANCE ESPECIALEY IN DEGRADED MODES OF OPERATION	FATIGUE/STRESS/ANXIETY HAVE GREATER IMPACT ON PERFORMANCE WITHOUT A 'BUDCY' PRESENT.	INTEGRATED, AUTOMATED COCKPIT DESIGN WORRLOAD EVALUATIONS, A-PROPRIATE TRAINING	USAARL	.: :1 Te
01	S:006 WILL FROI SUSI ADVE ACCC	SIDD6 WILL THE FATIGUE AND STRESS FROM THE MAINTENANCE BURDEN OF SUSTAINED CONTINUOUS OPERATIONS ADVERSELY AFFECT MISSION ACCOMPLISHMENT?	FATIGUE AND STRESS CAN INDREASE ERROK RATES AND TIME TO ACCOMPLISH TASKS. EXCESSIVE FATIGUE AND STRESS MAY ADVERSELY AFFECT MISSION ACCOMPLISHMENT.	COMPLETE ONGOING ANALYSES (EG HARDMAN, LSA/LSAR, TWO LEVEL MAINTENANCE, CONTRACTOR TRAINING ANALYSIS ) AND RESOLVE ISSUE PRIOR TO FSO.	æ	11 10
7 11/7 12	01042 DOE! PESS FLES CHAM MODE	OIGA2 DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	IF PART OF THE MISSION EQUIPMENT CAPABILITY IS DISABLED, THE PILOT MAY BE UNABLE TO COMPLETE THE MISSION AND/OR RETURN HOME.	PERFORM ANALYSES, SIMULATION AND OPERATIONAL EVALUATION TO ASSURE THAT THE SYSTEM DESIGN PROVIDES SUFFICIENT FLEXIBILITY FOR MISSION SUCCESS.	ž.	01 11

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LAN 1830,ES LATA BADE UNSTING OF MEMO PIELOS (Pister pro)

MHEN RESOLVED	=
RESPON- SIBLE AGENCY	¥.
RESPON- WHEN SIBLE RESGIVED IMPACT AGENCY	PERFORM ANALYSES, SIMULATION AND OPERATIONAL EVALUATION TO ASSURE THAT THE SYSTEM DESIGN PROVIDES SUFFICIENT FLEXIBILITY FOR MISSION SUCCESS.
IMPACT	IF PART OF THE MISSION EQUIPMENT CAPABILITY IS 01SABLED, THE PILOT MAY BE UMABLE TO COMPLETE THE MISSION AND/OR RETURN HOME
SSUESTION NO COSE ISSUE STATEMENT	0.342 DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT WODES, AND EFFECTIVELY PERFORM THE MISSION?
3000 3000	06.5 6.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6
CKITICAL QUESTION NO	:·

DIG46 WHAT SYSTEMS ARE AUTOMATED	IF MAN-MACHINE INTEGRATION	ACCELERATE DEVELOPMENT OF CRITICAL	ď	
AND HOW SPECIFIC AUTOMATION	WITH AUTOMATED SYSTEMS IS NOT	INFORMATION PROCESSING TECHNOLOGIES.		
ACCOMMODATES SINGLE OREW MEMBER	FULLY DEVELOPED, SINGLE CREW	CONDUCT ANALYSIS, SIMULATION		
OPERATION HAS NOT BEEN COMPLETELY	MEMBER LHX MISSION ACCOMPLISHMENT	AND EVALUATIONS TO ASSESS CAPABILITIES.		
ASSESSED. HF DESIGN STANDARDS DO	AND SURVIVABILITY WILL BE GREATLY	REVISE HF DESIGN STANDARDS. DEVELOP		
NOT FULLY ADDRESS ISSUES AND	REDUCED.	EFFECTIVE TRAINING		
TRADE-OFFS IN AUTOMATION AND				
COGNITIVE OVER OAR				

## Issues Reported by TYPECODE and CRITICALITY SCORE Sequence

The following listing is shown in a sequence which displays the records first by the TYPECODE (Operator O=1, Maintainer M=2, and Support S=3), then sorts them within each type code class by the CIRTTICALITY SCORE (CRITSCR: Essential=E, High=H, Medium=M, Low=L). Issues in the operation domain will be shown first, arranged so that the issues with E CRITSCRs will appear first. This listing helps to find those operator issues which urgently need to be solved.

\*\* VAADANT TAMP STITUA, DESTITUA AFDORF (1546P) (1646P) (1666P) (1666P

MANPRINT DOMAIN STATUS	PEN Q	PENC.	RFP RFP	PEND	RE PER PER PER PER PER PER PER PER PER P
RISK E	H + + + + + + + + + + + + + + + + + + +	높	HF A1081 P.9 M/H A1003 P.R-60	C H	포
CRITTS SOURCE CALTTY OF SCORE SOUL'N			60 60 40 1- 40 40 37 60	A 1083 4FEA P. 2C	A1083 HFEA P. 22
PAGE/PARA CR IN SOURCE CAI DOCUMENT SO	PAR S, ESSENTIAL ECHARACTERISTICS a(3) AND ANNEX B TO LOA, AND PAR A OF O&O SUJANCE LETTER, ELISTONE LETTER, HX MILESTONE 1/11, DECISION REVIEW BY ASARC. DAMA-RA 21 NOV 85 (IDNO R1007) ENCL 6, ENCL 8.	III OPERATIONAL E OLAN, PAR 2 "HESE CAPABILITIES INCLUDE AIR—TO-AIR CCMAX. III, PAR AIGNAFT HITH AIRNEATH HITH AIR	P1 (F0U0)	P20 (F0U0) E	P22 (F0U0)
SOURCE DOCUMENT TONO	R1002 PAR CHAP AND AND CHI CHI CHI CHI CHI CHI CHI CHI CHI CHI	RIGGI III. OAPP AIR	A (583 P1 (	A1083 P20	A1083 P22
MHEN RESOLVED	~ :: 5	.: «	SS SS:	PRIOR TO FSD A1	07 11 A)
RESPONSIBLE AGENCY	£	PM/TRADOC	<b>à</b> .	à	ž. Č.
SOCUMEN: #1.10k SUPPORTING ISSUE SELECTION	RIDOT GUIDANCE LETTER, LHX MILESTONE I/II, DECISION REVIEW BY ASARC. DAMA-RA 2: NOV 85 ENCL 6.ENCL 8.: R:GC' 050 THE LHX OPERATIONAL WODE SUMMARY IN ANNEX A/B	R1001 0&0 PLAK	A1083, HFEA 1-1/17/86 (F030)	A1083, HFEA 20-1/17/86A (F3UG)	A1083, HFEA 22-1/17/86 (FOUC)
ALLEN DERIVED ISSUE	IS SINGLE PILOT OPERABILITY CAN A SINGLE PILOT OPERATE THE RIDDT GUIDANCE LETTER, LHX LHX IN THE GIVEN OPERATIONAL MILESTONE 1/11, DECISION MODE SUMMARY AND MISSION REVIEW OF ASARC.DAMA-RA 2: PROFILES? RICE 6. ENCL 8.: RIGE 6. ENCL 8.: ANNEX A/8	CAN A PILOT SUCCESSFULLY ENGAGE OTHER HELICOPTERS IN AIR TO AIR COMBAT WHILE FLYING "46 A/C?	CAN AN EFFECTIVE AND ACCEPTABLE HELMET MOUNTED DISPLAY BE DEVELOPED FOR LYX?	DESIGN OF LHX NEEDS TO ASSURE THAT ALL EMERGENCY PROCEDURES CAN BE PERFORMED BY A SINGLE PILOT.	CAN A SINGLE PILOT COMPLETE DOES THE SINGLE CREW MEMBER THE MISSION, GIVEN SINGLE DESIGN ALLOW THE PILOT THE POINT FAILURES? MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?
OPER=1 MAIN=2 SUPT=3 CRITICAL QUESTION	1S SINGLE PILOT OPERABILITY FEASIBLE?		IS THE WIDE FIELD OF VIEW DISPLAY FECHNOLOGY MATURE TO SUPPORT LSD FS0?	1S THE STINGLE PTOT ABLE TO EFFECTIVELY HANDLE ALL EMERGENCY PROCEDURES AND ASSOCIATEL ACTIONS?	CAN A SINGLE PILOT COMPLETE THE MISSION, GIVEN SINGLE POINT FAILURES?
	-				1 /11
SWMP CRITICAL QUESTION NUMBER	0		19:1	60	1 10/1 11/1.14/7.11/ 1

2, 50 € 30 315 05 33°

(SEQUENCED ON CRITICAL QUESTION REPORT (:SKEP-T)

(SEQUENCED ON CRITICALITY WITHIN MANPRINT DOMAIN)

OPERATOR : 1, MAINTAINER = 2, SUPPORT = 3

(INDEXED ON TYPECO + CSCD)

SCORE SOUL'N RISK MANPRINT DOMAIN STATUS PEND RFP PENO. PEND. RFP PENO. PEND. RFP PEND 노 生 ¥ 냪 'n ¥ -57, PA P.R-56 (C) A:081 A1003 P. 8 & A 1081 Ŧ, о С. 8 A1683 A 1083 CALTI- SOURCE A1083 HFEA P.22 A 1083 HFEA P. 22 A 1083 HFEA A 1083 p. 24 P. 27 HFEA P. 22 HFEA P. 22 HFEA CALITY PAGE/PARA IN SOURCE DOCUMENT P22 (F0U0) P27 (F0UC) P22 (F0U0) P22 (F0U0) P22 (F0U0) P24 (F0U0) DOCUMENT SOURCE ONO A:093 A:083 A1083 A1083 A1083 \$1033 WHEN RESOLVED 01 11 11 10 :: 11 10 FSS FSD Ġ RESPONSTBLE æ ð À ă à ₹ A1083, HFEA 24-1/17/86A CAN FLIGHT CONTROL

CAN TECHNOLOGY ACCOMPLISH THE A1083, HFEA 27-1/11/86
AUTOMATION REDUCE WORKLOAD AUTOMATIC FLIGHT CONTROL WHICH (FOUG) A1083, HFEA 22-1/17/86 A1083, HFE4 22-1/17/85 A1083, HFEA 22-1/17/86 A1083, HFEA 22-1/17/86 SUPPORTING ISSUE DOCUMENTATION. (FOUC) (F000) (F000) (eno-) (FOUC) CAN THE TARGET ACQUISITION PROCESS BE SUCCESSFULLY AUTOMATED TO ASSURE EFFECTIVE ENGIGH TO ALLOW THE SINGLE SINGLE OREW MEMBER OPERATIONS? CAN A SINGLE PILOT COMPLETE DOES THE SINGLE CREW MEMBER THE MISSION, GIVEN SINGLE DESIGN ALLON THE PILOT THE POST: FAEXIBILITY TO REACT TO DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE DOES THE SINGLE CREW MEMBER DESIGN ALLOW THE PILOT THE CAN A SINGLE PILOT REACT TO LUES THE SINGLE CREW MEMBER ENOUGH FOR THE SINGLE PILOT IS CRITICAL TO SINGLE CREW TO ACCOMPLISH THE MISSION? MEMBER OPERATION? DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO DESIGN ALLOW THE PILOT THE MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND MISSION CHANGES, DEGRADED MISSION CHANGES, DEGRADED ALLEN DERIVED ISSUE FLEXIBILITY TO REACT TO FLEXIBILITY TO REACT TO PLEXIBILITY TO REACT TO EFFECTIVELY PERFORM THE EFFECTIVELY PERFORM THE EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE EFFECTIVELY PERFORM THE EQUIPMENT MODES, AND FISSION? ¿NO1851# 4ISSION? MISSION? CAN THE AUTOMATIC TARGET ACQUISITION SYSTEM OPERATE MILL SINGLE POINT FAILURES OF THE SYSTEM AUTOMATION INCREASE PI OT WORKLOAD SO INCREASE PILOT WORKLOAD SO MILL SINGLE POINT FAILURES OF THE SYSTEM AUTOMATION MISSION AND HAVE ACCEPTABLE ACCOMPLISHMENT OR REDUCE ACCOMPLISHMENT OR REDUCE CHANGES IN THE MISSION? PILST TO ACCOMPLISH THE QUICKLY AND ACCURATELY AS TO PREVENT MISSION AS TO PREVE T MISSION CRITICAL QUESTION SURVIVABILITY? SURVIVABLITY? SURVIVABILITY? 0056: MA. N. SUPT=3 1, 11/1, 14/7, 11/7, 12 1 QUESTION NUMBER SMIND CR. 71CAL 1.14/7.11/7.12 <u>:-</u> : . <u>::</u> ş: --

.43 MANYA NY SHIP CRITICA, DEESTIN ACOURT (1946) Y)
(SECUNDED ON CRITICA, I'M WITHIN MANARIN') DOWALL)
(PERATOR = 1, MAINTAINER = 2, SUPPORT = 3
(INDEXED ON TYPECD + CSCE)

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MANPRINT DOMAIN STATUS	<u></u>	<u>- u</u>	<b>u</b> -	
ANPRINT	9 2 1 1 1	FF-TNG	щ.	<u>%</u>
RISK PL	M/H H A 1081 P 8 & L P 9 P 9 P 1003 P 1 P R 6 C C P 8 R C C C P 8 R C P 8 R C	M/H M/1083 P.9 & 6 P.9	¥	M/H K A1003 P.R-VI I-17 SUMMAR Y
SUJRICE OF SOUL'N	A 14 16 18 18 18 18 18 18 18 18 18 18 18 18 18	A 100 25 A 25	A 1083 P. 29	A1083 M HFEA A P.32 P 1
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PASE, PARA (N. SOURCE DOCUMENT	P25 (F0U0)	P25 (FOUC)	P52 (F0U0)	P22 (FOUC)
SOURCE DOCUMENT IDNO	A1083	A1083	A1083	A 1682
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WHEN RESOLVED				
	FSD	650	FSD	FSD
RESPONSIBLE AGENCY	_		_	_
	£	¥.	ž. č.	æ C.
DOCUMENTATION SUPPORTING :SSUE SELECTION	MHAT SYSTEMS ARE AUTOMATED AND A1083, HFEA 25-1/17/86A HOW SPECIFIC AUTOMATION (FOUD) ACCOMMODATES SINGLE CREW HEMBER OPERATION HAS NOT SEEN COMP.ETG.Y ASSESSED. HE DESIGN STANDARDS DO NOT FULLY ADDRESS ISSUES AND TRADE OFFS IN AUTOMATION AND COGNITIVE OVERLOAD.	WHAT SYSTEMS ARE AUTOMATED AND A 1083, HFEA 25-1/17/86A HOW SPECIFIC AUTOMATION (FOUO) ACCOMPODATES SINGLE CREW MEMBER OPERATION HAS NOT BEEN COMPLETELY ASSESSED HF SESSEN STANDARDS DO NOT FILLY ADDRESS ISSUES AND TRADE OFFS IN AUTOMATION AND COGNITIVE OVERLOAD.	AN INTEGRATED APPROACH TO CREW A1083, HEEA 29-1/17/86A STATION AND DISPLAY LIGHTING (FOUG) IS NEEDED. LIGHTING FOR MAINTERANCE AND FARP HAS NOT BEEN FULLY EVALUATED.	THE HUMAN INTERACTIONS AND A1083, HFEA 32-1/11/86 MORKLOAD RELATED TO FLYING THE (FOUO) AIRCRAFT WITH A "SIDE-ARM-CONTROLLER" AND CONTROLLING J.HER FUNCTIONS AT THE SAME TIME ARE NOT FULLY ASSESSED.
DOCUMENTATION SUPPORTING :SSUE SELECTION	FEA 25-	- 52 <b>4</b> 23	FEA 29-	FEA 32-
98 1000 1000	A1083, H (F0J0)	А1083, Н (FOUO)	.1083, H FOUG)	F0U0)
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15505	NUTOMATE NATION LE CREM LAS NOT SED. HE SED. HE NO NOT E COGNITI	NUTOMATE AATION LE CREW IAS NOT SED HA SED HA SED HA SED COSUITIE COGNITIE	KOACH TORT AY LIGHT AY LIGHT ING FOR THE HAS FED.	TIONS AND TO FLYING THE LER" AND FUNCTIONS AT NOT FULLY
ALLEN DERIVED	WS ARE A TC AUTON TC AUTON ASSESS NDAROS I SUES AND	MS ARE / IC AUTON ES SING RATION H ASSESS FORES ANG SUES ANG	TED APPR D DISPL/ LIGHTI E AND FJ EVALUAT	INTERACT ELATED TITH A CONTROLU 3 2THER
ALLEN DERIVED	MHAT SYSTEMS ARE AUTOMATED AND HOLE SPECIFIC AUTOMATION HOLE CREM MEMBER OPERATION HAS NOT BEEN COMP. FTE. Y ASSESSED. HE OESIGN STANDARDS DO NOT FULLY ADDRESS ISSUES AND TRADE OFFS. IN AUTOMATION AND COGNITIVE OVERLOAD.	WHAT SYSTEMS ARE AUTOMATED ANI HOW SPECIFIC AUTOMATION ACCOMPODATES SINGLE CREW MEMBER OPERATION HAS NOT BEEN COMPLETELY ASSESSED H? SENGLY SYAVDARDS DO NOT FILLY ADDRESS ISSUES AND TRANDE OFFISION AND COSNITIVE OVERLOAD.	AN INTEGRATED APPROACH TO CRI STATION AND DISPLAY LIGHTING IS NEEDED. LIGHTING FOR MAINTERANCE AND FARP HAS NOT BEEN FULLY EVALUATED.	THE HUMAN INTERACTIONS AND MORKLOAD RELATED TO FLYING AIRCRAFT MITH A "SIDE-ARM-CONTROLLER" AND CONTROLLING J.HER FUNCTION HE SAME TIME ARE NOT FULL ASSESSED.
		S3	<del>p</del>	
110N	CAN SYSTEM AUTOMATION REDUCE PILOT HORILOAD TO A POINT THAT WILL ALLOW THE SINGLE PILOT TO ACCOMPLISH THE MISSION AND MAY: ACCEPTABLE SURVIVABILITY?	WILL SINGLE POINT FAILURES OF THE SYSTEM AUTOMATION INCREASE PILOT WORKLOAD SO AS TO PREVENT MISSION ACCOMPLISHMENT OR REDUCE SURVIVABILITY?	CAN THE LIGHTING SYSTEMS (NIGHT VISION DEVICES, PAREL AND HELMET DISPLAYS, LASER AND FLASHELINDWESS PROTECTORS) BE RESOLVED AND AN INTEGRATED LIGHTING SYSTEM DEVELOPED THAT DOES NOT INTERFERE MITH THOSE SYSTEMS OPERATION?	DOES THE MOUNTING OF SECONDARY SMITCHES AND BUTTONS ON THE SIDE-ARM-CONTOLLER DEGRADE THE PILOT'S PERFORMANCE?
CRITICAL QUESTION	AUTONA OT WORL I WILL I OT TO A	LE POINT STEM AUT PILOT M FENT MIS AMENT OF	IGHTING VIS OF 1 VIGHT VI PANEL AN LASER A DNESS PR ONESS PR ONESS PR THAT OF	MOUNTING SMITCHE N THE CONTOLLE
CRITICA	CAN SYSTEM AUTOMATION REDUCE PILOT WORKLOAD POINT THAT WILL ALLOM SINGLE PILOT TO ACCOM THE MISSION AND HAVE ACCEPTABLE SURVIVABIL	WILL SINGLE POINT FAIL OF THE SYSTEM AUTOMAT. INCREASE PILOT WORKLO. AS TO PREVENT MISSION ACCOMPLISHMENT OR RED. SURVIVABILITY?	CAN THE LIGHTING SYSTEMS (NIGHT VISION DEVICES, PAMEL AND HELM DEVICES, PAMEL AND HELM DEVICES, PAMEL AND HELM FLASHELINDNESS PROTECTO HERSELINDNESS PROTECTO INTERFERE LIGHTING SYS DEVELOPED THAT DOES NOT INTERFERE MITH THOSE SYSTEMS OPERATION?	DOES THE MOUNTING OF SECONDARY SHITCHES AND BUTTONS ON THE SIDE-ARM-CONTOLLER DEGI THE PILOT'S PERFORMANCE
OPER=1 SMMP CRITICAL MAIN=2 QUESTION NUMBER SUPT=3 CRITICAL QUESTION	중 및 문 중	MI OF AC SUI	2	8 % B % E
P M M	-		-	~
SMMP CRITICAL QUESTION NUMBER	17.12			
SMMP	1.13/1.14/7.12	7 :2	5.02	<u>.</u>
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(15EQUENCED ON CRITICAL QUESTION (EPCH" (15KEP-1)
(5EQUENCED ON CRITICALITY WITHIN MANPRINT DOMAIN)
(5ERATOR = 1, MAINTAINER = 2, SUPPORT = 3
(1Y)EKED ON TYPECO + CSCO)

	MAMPRINI DOMAJA STATUS	PEND PEND PEND PEND PEND PEND PEND PEND	PEND RFP	PEND RFP	RFP	0N3c
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	R RISK	H A 9 8 8 8 8 9	# # 0 0 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		~	#/¥ A 108:1 P.9 & P.9
	CRITI- SOURCE CALITY OF SCORE SOUL'N	A1083 HFEA P.37	A1083 HFEA 5 37		R1010, RFP P2.3.2 .16.4 AND 3.3.3	
		w	w	ш	ш	H DEC
	PAGE/PARA IN SOURCE DOCUMENT	P37 (F0VO)	P37 (F0UO)	PAGE 18	NH ISSUES, P-10	LHX TSN-ISSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING
à	SOURCE DOCUMENT I DNO	A1083	A1083	A1075	A1075	P1038
לואסרים הישונות מים חשים לו	MHEN RESOLVED	650	FSD	FSS	RFP	11 13
2×3/1/1	RESPONSTBLE AGENCY	æ.	æ.	₩. ₩.	æ æ	ž.
	DOCUMENTATION SUPPORTING ISSUE SELECTION	(FOUO)	A1083, HFEA 37-1/17/86A (FOUO)	A1075, HH 1SSUES PAGE 18	A1075, HH ISSUES, P-10	A1083, HFEA 3-1/17/86A
	ALLEN DERIVED ISSUE	THE SYSTEM FOR MAVIGATING NOE AT NIGHT AND IN ADVERSE METHER CONDITIONS WHICH REQUIRES A MIDE FIELD OF VIEW M.TH SUITABLE SENSITIVITY AND RESOLUTION, IS A HIGH RISK SEVELOPMENT.	THE SYSTEM FOR NAVIGATING NOE AT NIGHT AND IN ADVERSE WEATHER CONDITIONS WHICH REQUIRES A WIDE FIELD OF VIEW AITH SUITARLE SENSITIVITY AND RESOLUTION; IS A HIGH RISK DEVELOPMENT	VISUAL DISPLAY PARAMETERS MUST A1075, HE ISSUES PAGE 18 Fall Within Acceptable Operational Limits.	MHAT IS THE ANTHROPOMETRIC ANTHROPOMETRIC REQUIREMENTS DESCRIPTION OF THE HAVE NOT BEEN ESTABLISHED FOR DEPOLATION OF INDIVIDUALS THE LHX. INVOLVED IN OPERATING. MAINTAINING AND SUPPORTING THE LHX? (I.E., RANGE OF PHYSICAL DIMENSIONS FOR MEN & MOMEN.)	IS THE INTERACTION OF HOW SUCCESSFULLY DOES THE FATIGUE/STRESS/ANXIETY CURRENT LHX DESIGN DEAL WITH OWENCEMANDING IN THE SINGLE THE HUMAN FACTORS ISSUES IN PLACED COCKPIT TO THE CONNITIVE OVERLOAD AND PLLOT EXTENT THAT MISSION FATIGUE DURING COMBAT ACCOMPLISHMENT IS RISKED? OPERATIONS, CONTINUED OPERATION, AND NGC OPERATIONS?
	OPENTS SAMP CRITICAL MAINEZ QUESTION NUMBER SUPER CRITICAL QUESTION	CAN THE MIGHT VISION PILOTAGE SYSTEM ALLON A SINGLE PILOT TO FLY NOE AT MIGHT AND IN ADVERSE MEATHER TO ACCOMPLISH THE MISSION WITH AN ACCEPTABLE LEVEL OF SAFETY?	CAN THE NIGHT VISION PILOTAGE SYSTEM ALLOW A SINGLE PILOT TO ELY NOE AT NIGHT AND IN ADVERSE MEATHER TO ACCOMPLISH THE MISSION WITH AN ACCEPTABLE LEVEL OF SAFETY?		MHAT IS THE ANTHROPOMETRIC DESCRIPTION OF THE PODULATION OF THE INVOLVED IN OPERATING, MAINTAINING AND SUPPORTING THE LHX? (I.E., RANGE OF PHYSICAL DIMENSIONS FOR MEN & MOMEN)	IS THE INTERACTION OF FATIGUE/STRESS/ANXIETY OVEREWANDING IN THE SINGLE PLACED CCCROTT TO THE EXTENT THAT MISSION ACCOMPLISHMENT IS RISKED?
	OPENY MAINEZ SUPTES	-	<del>-</del>	-	-	
	SAMP CRITICAL QUESTION NUMBER	1 18/7 08	7.08		8. 8.	6,01/7 %

Page No. 227.05-8°

LAY WANDRINT SMMP CRITICAL QUESTION REPORT (15KE)-17, (SEQUENCED ON CRITICALITY WITHIN WANDRINT BOWAIN, DOFAIN, DOFAIN, THE WAINTAINER = 2, SUPPORT = 3 (INDEXED ON TYPEG + CSC.)

AIN STATUS	PENO.	RES	WRES	PEND.	ONEC	PEND.	PEND RFP
RISK MAMPRINI DOMAIN STATUS	<del>7</del>	TNS	7.KS	¥	냪	HF - TNG	¥
re manne	#/# A 108.1 P.9	<u>ت</u>		9 .	m _	en .	8
CRITT- SOLATE CALITY OF SCORE SOULTN		R1315 RFP 23.E.1		A1683 HFEA P.2	A1083 HFEA P.3	A1083 HFEA P.3	A1083 HFEA P.7
85 <b>8</b> #	н 3 рес	¥	F ATORS' (R)	x	±	I	I
PAGE/PARA CRITI- IN SOURCE CALITY DOCUMENT SCORE	LHX TSN-1SSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING	ROC PAGE F-2 PARAGRAPH 2, E	PASE HEADING "HELICODIEE, "RAINING, OPERATORS' (NO PAGE NUMBER)	P2 (F0U0) -	P3 (F0U0)	P3 (F0U0)	P7 (F0U0)
SOURCE DOCUMENT 1DNC	P1038	R: C03	P1538	A1083	A1083	A1083	A1063
WHEN RESOLVED	11	TOA AP U VOL IX, TNG	or 11	FSD	07 11	07 1.1	11 10
RESPONSIBLE AGENCY	₹	PM/TRADOC	TRADOC	¥.	USAAR!.	USAARL	<del>ž</del> .
DOCUMENTATION SUPPORTING ISSUE SELECTION	A1083, HFEA 3-1/11/86A	R1003 ROC	P1039, LHX TSM-15SUES GENERATED FROM 3 DEC '985 FT RUCKER MEETING	A1083, HFEA 2-1/11/86 (FOUO)	A1083, HFEA 3-1/17/86A (FOUC)	A1083, HFEA 3-1/17/86 (FOUO)	A1083, HFEA 7-1/17/26A (FOUO)
ALLEM DERIVED ISSUE	HOW SUCCESSFULLY DOES THE CURREN. LAX DESIGN DEAL WITH THE HUMAN FACTORS ISSUES IN COGNITIVE OVERLOAD AND PL.CT FAITGUE DURING COMBAT OPERATIONS, CONTINUED OPERATION, AND NBC OPERATIONS?	IS CONTRACTOR DELLVERED TRAINING LIMITED TO PILOT TRAINING? STATEMENT IN ROC IS NOT CLEAR.	ARE TRAINING STANDARDS ADEQUATE TO ALLOW SCAT PILOTS TO PERFORM UNDER HICH TASK LOADING?	CAN LHX FLIGHT HELMET MITH HMD A1083, HFEA 2-1/17/86 SIGHTING SYSTEM, AND POSSIBLE (FOUG) NBC, LASER, AND FLASH BLINNDESS PROTECTIVE DEVICES MEET WEIGHT REQUIREMENTS?	FATIGUE/STRESS/ ANXIETY MAY DEGRADE SINGLE CREW MEMBER PERFORMANCE ESPECIALLY IN DEGRADED MODES OF OPERATION.	FATIGUE/STRESS/ ANXIETY MAY DEGRADE SINGLE CREW MEMBER PERFORMANCE ESPECIALLY IN DEGRADED MODES OF OPERATION.	NBC AND COLD MEATHER PROTECTIVE CLOTHING CAN HAVE AN ADVERSE IMPACT ON SOLDIER PERFORMANCE.
OPER=1 SMMP CRITICAL MAIN=2 QUESTION NUMBER SUPT=3 CRITICAL QUESTION	HOM MUCH WILL STRESS AND FATIGUE AFFECT MISSION ACCOMPLISHMENT?		ARE TRAINING STANDARDS ADEQUATE TO ALLOW SCAT PILDTS TO PERFORM UNDER HIGH TASK LOADING?	IS THE INTEGRATED HELMET DEVELOPMENT SUPPORTIVE OF 3 95 LB CRITERIA?	IS THE INTERACTION OF FATIGUE/STRESS/ AN FATIGUE/STRESS/ANXIETY DEGRADE SINGLE CRE OVERDEMANDING IN THE SINGLE PERFORMANCE ESPECIPLACE CCCMPIT TO THE DEGRADED MODES OF EXTENT THAT MISSION ACCOMPLISHMENT IS RISKED?	HOW MUCH WILL STRESS AND FATIGUE AFFECT MISSICN ACCOMPLISHMENT?	IS PERSONNEL AND PROTECTIVE NBC AND COLD MEATHER EQUIPMENT COMPATIBLE WITH PROTECTIVE CLOTHING (THE TASK AND EQUIPMENT AN ADVERSE IMPACT ON INCERFACES TO PERMIT PERFORMANCE.  PERSONNEL TO ACCOMPLISH FUNCTIONS?
OPER=1 MAIN=2 SUPT=3	-	-	-	-	~	-	~
SMMP CRITICAL QUESTION NUMBER	7.10		œ 	1.02	6.01/7.10	7.10	7.03

(SEQUENCED ON CRITICAL QUESTION REPORT (ISMEP-1)
(SEQUENCED ON CRITICALITY MITHIN MANPRIN' DOMAIN)
OPERATOR = 1, MAINTAINER = 2, SUPPORT = 3
(INDEXED ON TYPECD + CSCD)

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MAIN STATUS	PEND.	UNRES	UNRES	PEND.	PEND.	PEND.
RISK MANPRINT DOMAIN STATUS	HH-1NG	JNG D	¥	生	눞	# #3
SOURCE OF SOUL'N RISK	A 1083 HFEA P. 10	THIS DATA BASE AND AND HEA	THIS DATA BASE AND A1083	P. 12 P. 12		A1083 L HFEA A1081 P.14 P.8
CALITY CALITY SCORE	±	I	x	Ŧ	±	Ŧ
PAGE/PARA IN SOURCE DOCUMENT	P10 (F0U0)	P11 (FOUO)	P11 (F0U0)	P12 (F0U0)	P13 (F0U0)	P14 (F0UO)
SOURCE BOCUMENT DNC	₩1083	A 1083	A:083	A1083	A1083	A 1083
KESPONSIBLE AGENCY MHEN RESOLVED	Ľ	PRIOR TO 07 []	PRIOR TO CT 11	FSD	RFP	FSD
KESPONSIBLE ASENCY	à	TRADOC	<b>*</b>	₹	₹	<del>&amp;</del>
DOCUMENTATION SUPPORTING ISSUE SFLECTION	A:083, HFEA 10-1/17/86 (FOUO)	A1083, HFEA 11-1/17/86 (FOUO)	A1083, HFEA 11-1/11/86 (FOUC)	A1083, HFEA 12-1/17/86 (FOUO)	A1083 HFEA 13-1/17/86 (FOUO)	(FOUO)
ALLEN DEKIVED ISSUE	LASERS AND IR RADIATION CAN PRODUCE VISUAL DARAGE DURING COMBAT AND TRAINING. RE AND MICROAUVE EXPOSURE ARE PUTAL HEALTH HAZARDS	WHAT ARE THE TRAINING REQUIREMENTS FOR THE SECOND CREW WENBER IN THE UTILITY AIRCRAFT?	WHAT ARE THE CREW STATION DESIGN CRITERIA FOR THE LHX-UTILITY?	CLEAR SPEECH COMMUNICATION AND A1083, HFEA 12-1/17/86 AMOIO CUES ARE CRITICAL FOR (FOUO) SINGLE PILOT OPERATION. IMPROVED SPECH SYTELLISIBILITY OVER CURRENT AIRCRAFT IS NECESSARY.	LHX CONCEPTS PROVIDE: (1) HELMET MOUNTED NIGHT VISION SYSTEM OR (2) NIGHT VISION GOGGLES FOR UTILITY PILOT. #1 LEAVES SECOND CREW MEMBER WITH NO N V. CAPABILITY. WITH #2, CURRENT SAFETY AND OPERATION CONSTRAINTS PRECLUDE SINGLE PILOT NIGHT OPERABILITY.	THE RESOLUTION/ACCURACY OF THE A1083, HFEA 14-1/11/86A DIGITAL DATA BASE FOR THE MAP (FOUO) DISPLAY IS LESS TAMN THAT REQUIRED FOR NOE/ADVERSE MEATHER NAVIGATION.
CRITICAL QUESTION	15 THE PROTECTION OF PERSONNEL FROM LASERS, RADIO FREQUENCY AND MICROMANE SUFFICIENT TO PRECLUCE HEALTH SAFETY HAZARS?	MHAT ARE THE TRAINING MHAT ARE THE TRAIN REQUIREMENTS FOR THE SECOND REQUIREMENTS FOR CREW MEMBER IN THE UTILITY CREW MEMBER IN THE AINCRAFT?	WHAT ARE THE CREW STATION DESIGN CRITERIA FOR THE LHX-UTLITY INCLUDING THE SECOND GREW MEMBER STATION?	ARE THE SPEECH COMMUNICATIONS AND AUDIO CUES OF SUFFICIENT CLARITY AND INTELIGIBILITY TO PERMIT EFFECTIVE COMMUNICATION?	IS SINGLE PILOT OPERABILITY LHX CONCEPTS PROVIDE: (1) SUPPORTED EFECTIVELY BY HELMET MOUNTED NIGHT VISION NIGHT VISION GOGGLE SYSTEM OR (2) NIGHT VISION OPERATION? LEAVES SECOND CREW MEMBER NO N V. CAPABILITY MITH I CONSTRAINTS PRECLUDE SINGL CONSTRAINTS PRECLUDE SINGL PILOT NIGHT OPERABILITY.	IS DIGITAL DATABASE MAP SJPPORTIVE OF SINGLE PILOT OPERATION?
OPERST MAINST SUPTS SEESE	-	-	_	-	<del></del>	-
SMMP CRITICAL QUESTION NUMBER	÷	4. 10R	.: .19R	1.03	1.04	99 1-

.HX WAMPRINI SHMP CRITICA, CLESTION REDOKT, (ISKEP-T)
(SEQUENCED ON CRITICALITY WITHIN MANKINI DUMAIN)
OPERATOR = 1, MAINTAINER = 2, SUPPORT = 3
(INGENED ON TYPECD + CSCD)

MANPRINT DOMAIN STATUS	PEND PR	PEND.	PEND.	UNRES	UNRES
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RISK	M/H A1003 P.R-27 PAR		- <del></del>	H 1081 10.8	H 4 0.
SOURCE OF SOUL'N	A 1083 P	A 1083 P	A1083 HFEA P.26		
CAL.TY CAL.TY SCORE	±	r	I	x	æ
PAGE/PARA I N SOURCE DOCUMENT	P15 (F0U0)	P18 (F0UC)	P26 (F0U0)	81a, r3, para 1.8	BIA, P3, PARA 1.8
SOURCE SOUMENT IDNO	A1083	A 10.83	A1083	P1012	P1612
MMEN RESOLVED	11 :10	8.	PRIOR TO FSD	P31 PROGRAM	P31 PROGRAM
RESPONSIBLE AGENCY	TRADOC	3	æ.	<u>*</u>	£
DOCUMANTATION SUPPORTIVE ISSUE SELECTION	ION INCLUDES A A1083, HFEA 15-1/17/86A THE PILOT TO (FOUO) CONTROL AND/OR DESIGNATION TIVELY USING IN AN ENT. CAN THESE CONCURRENTLY	(=0.03), H=E& 18-1/17/86& (=0.03)	A1083, HFEA 2E-1/17/86 (FOUC)	P1012, BTA, P3, PARA 1.8	P1012, 8TA, P3, PARA 1.8
ALLEN DEKIVED 1950E	SCAT COMBAT MISSION INCLUDES A REGULFEMENT FOR THE PILOT TO MAINTAIN FLIGHT CONTROL AND/OR PERFORM A TARGET DESIGNATION TASK WHILE EFFECTIVELY USING THE TURRETED GUN IN AN OFF-ARIS BECAGGMENT. CAN THESE TAKS BE PERFORMED CONCURRENTLY SUCCESSFULLY?	VOICE RECOGNITION SYSTEMS ARE NECESSARY TO REDUCE PILOT AGRICADD. TECHNOLOGY DCES NOT APPEAR SUFFICIENTLY MATURE TO WEET THE REQUIREMENT UNDER COMBAT CONDITIONS	HOW CAN IN-FLIGHT DATA ENTRY SYSTEMS REDUCE WORKLOAD TO LEVELS REQUIRED FOR SUCCESSFUL OPERATIONS?	CAN SINGLE PILOT OPERATION BE ACHIEVED WITHOUT MILLIMETER WAVE RADAR & INTEGRATED COMMUNICATION, NAVIGATION, IDENTIFICATION AVIONICS?	CAN SINGLE PILOT OPERATION BE ACHIEVED WITHOUT MILLIMETER MAVE RADAR & INTEGRATED COMMUNICATION, NAVIGATION, IDENTIFICATION AVIONICS?
UPER= MAIN=2 SUPI=3 CRITICAL QUESTIUN	CAN THE PLIOT EFFECTIVELY ALCRAFT WHILE SIMULTANEOUSLY ACQUIRING AND SERVICING TARGETS, ESPECIALLY FOR OFF-AXIS MEAPON EMPLOYMENT?	ARE VILLE RECCONTION SYSTEMS OF SUFFICIENT MATURITY TO DERMIT THEIR USE IN THE LAKY	MHAT DATA ENTRY PROCEDURES PRESENT THE LEAST WORKLOAD TO THE PLOT AND THE LEAST DIVERSION OF HIS ATTENTION FROM THE BATTLEFIELD?	CAN SINGLE PILOT OPERATION BE ACHIEVED WITHOUT MILLIMETER WAVE RADAR AND INTEGRATED COMMUNICATION, NAVIGATION, AND ISENTIFICATION AND	CAN SINGLE PILOT OPERATION BE ACHIEVEO WITHOUT MICLIMETER WAVE RADAR AND INTEGRATED COMMINICATION, NAVIGATION, AND IDENTIFICATION AVIONICS?
			·	<b></b>	•
SHWP C.C.T.CA. QUESTION NUMBER	90	Ç.	; 15	1 20R	208

(SEQUENCED ON CRITICAL QUESTION REPORT (SEQUENCED ON CRITICAL IT MITHIN MANPEINT DOWALN)

OPERATOR = 1, MAINTAINER = 2, SUPPORT = 3

(INDEXES ON TYPECD + CSCD)

	MANPRINT DOMAÍN STATUS	UNRES.	RES.	ON SECTION SEC	PEND.	PEND.
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	R RISK	H A1081 P.8				
	CALITY OF SCORE SOUL'N					
	CALITY SCORE	<b>x</b>	<b>E</b>	æ:	<b>3</b> :	•
	PAGE/PARA IN SOURCE DOCUMENT	81A, P3, PARA 1.8	PAR 5.a.(3) "THE LHX WILL BE DESIGNED TO MINIMIZE OPERATIONS AND SUPPORT COSTS FOR THE LIFE OF THE SYSTEM."	PAGE HEADING "HELICOPTER, THELINONG, OPERAIDR" NO PAGE NUMBER A1083 P15	PAGE HEADING 'HELICOPTER, TRAINING, OPERATOR' NO PAGE NUMBER A1083 P19	PAGE HEADING "HELICOPTER, TKAINLYG, OPERATOR NO PAGE NUMBER A1083 P19
(2)	SOURCE DOCUMENT I DNO	P1012	R1003	P1038	P1638	91632 6
מייינים מייינים מייינים מייינים	WHEN RESOLVED	P31 PROGRAM	TOA AP U VOL IX TNG	PRIOR TO FSD	PRIOR TO FSG	PRIOR 10 FSD
	RESPONSIBLE AGENCY	ží Š	TRADOC	TRADOC	TRADOC	TR#D0C
	DOCUMENTATION SUPPORTING ISSUE SELECTION	P1012, BIA, P3, PARA 1.8	R1003 ROC	P1038 LHX TSM-1SSUES GENERATED FROM 3 OEC 1985 FT RUCKER MEETING A1083. HEEA 19-1/17/86 (FOUC)	P1038 LHX TSM-ISSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING A1083, HFEA 19-1/17/86 (FOUO)	PIO38 LHX TSM-ISSUES SEWERATED FROM 3 DEC 1985 FT RUCKER MEETING A1083, HFEA 19-1/17/88 (FOUO)
	ALLEW DERIVED ISSUE	CAN SINGLE PILOT OPERATION BE ACHIEVED NITHOUT MILLIMETER MAVE RADAR & INTEGRATED COMMUNICATION, ANVIGATION, IDENTIFICATION AVIONICS?	IS THERE AN EFFECTIVE MEANS HOW CAN SCAT TRAINING BE DONE TO PROVIDE SCAT PILOT AT THE UNIT LEVEL WITHOUT TRAINING WITHOUT THE USE OF PROHIBITIVELY EXPENSIVE "AC SEAT SCAT TRAINING FIELDING TO UNITS OF A 2-PLACE ATRCART?	CAN THE AVAILABLE OPERATORS (PILOTS) BE SUCCESSFULLY TATIAED MITHIN THE TIME, COST OF CURRENT SYSTEMS, AND WITHOUT INCREASING THE CURRENT TRAINING FACILITIES?	CAN THE AVAILABLE OPERATORS (PILOTS) BE SUCCESSFULLY TRAINED WITHIN THE TIME, COST OF CURRENT SYSTERS, AND WITHOUT INCREASING THE CURRENT FRAINING FACILITIES?	CAN THE AVAILABLE OPERAIORS (PILOIS) BE SUCCESSFULLY TRAINED WITHIN THE TIME, COST OF CURRENT SYSTEMS, AND WITHOUT INCREASING THE CURRENT TRAINING FACILLITIES?
	OPER-1 MAIN-2 SUPT-3 CRITICAL QUESTION	CAN SINGLE PILOT OPERATION BE ACHIEVED WITHOUT MILLIMETER MAVE RADAR AND INTEGRATED COMMUNICATION, NAVIGATION, AND IDENTIFICATION AVIONICS?	IS THERE AN EFFECTIVE MEANS HOW CAN SCAT TRAINING BE TO PROVIDE SCAT PILOT AT THE UNIT LEVEL MITHOU TRAINING WITHOUT THE USE OF PROMIBITIVELY EXPENSIVE TWO SEAT SCAT TRAINING FIELDING TO UNITS OF A 2 AIRCRAFT? LHX MODIFICATION?	IS THE AVIATOR TO OPERATE CAN THE AVAILABLE OPERATOR AS THE SYSTEM INTESNATOR OR (PILOTS) BE SUCCESSFULLY THE COMMANDER?  OF CURRENT SYSTEMS, AND WITHOUT INCREASING THE CHITHOUT INCREASING THE CIRAINING FACILITIES?	CAN AN AVIATOR WITH THE INTEL:GENCE AND SKILL LEVELS OF CURRENT AVIATORS AND EXPECTED FUTURE RECRUITS EFECTIVELY OPERATE THE ADVANCED SYSTEMS?	MMAT ADDITIONAL SKILLS ARE REQUIRED OF THE LHX AVIATOR?
	OPER:1 MAIN:2 SUPT=3	-	_		-	_
	SMMP CRITICAL QUESTION NUMBER	1 20R	~ · •	0 3/3 03/3 04/4 0	3.03/3.04/4.0	3.04/4 0

(SEQUENCED ON CRITICAL QUESTION REPORT (ISREP-1)
(SEQUENCED ON CRITICALITY MITHIN MANPRINT DOMAIN)
OPERATOR = 1, MAINIAINER = 2, SUPPORT = 3
(INDEXED ON TYPECU + CSCD)

	STATUS	RFP RFP	PEND	8. 9. 9. 8. 9. 9.	RFP RFP	PEND.	UNRES
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	MANPRINI DOMAIN					HF-1NG	HF-TNG
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		A 1083 L HFEA A P.6 P	A 1083 HFEA P.8	A1683 HFEA P.9	A 1083 HFEA P. 16	P. 16	A 1083 HFEA P. 16
	CALITY CALITY SCORE	<b>x</b>	*	£	<b>1</b>	<b>x</b>	×
	IKA ICE INT						
	PAGE/PARA IN SOURCE DOCUMENT	P6 (F0U0)	P8 (FOUO)	P§ (F0U0)	P16 (F0UO)	P16 (FOUO)	P16 (F0U0)
,	SOURCE DOCUMENT 1DNO	A1083	A1083	A 1083	A1083	A1083	A 1083
2	WHEN RESOLVED		FSD		01 11	01 11	11
	WHEN R	FSD	PRIOR TO FSD	b	PRIOR TO OT 11	Pk108 T0 0T 11	PRIOR TO 01 11
	RESPONSTBLE AGENCY					TRADOC	TRAJOC
		7.	₹.	<b>₹</b> .	TRADOC		
	DOCUMENTATION SUPPORTING 15SUE SELECTION	/17/86A	/11/86A	/17/86A	FULL CAPABILITY AND A1083, HFEA 16-1/17/86A REQUIREMENTS AND HUMAN FACTORS (FOUO) AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	FULL CAPABILITY AND A1083, HFEA 16-1/17/86A REQUIREMENTS AND HUMMAN FACTORS (FOUC) AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES	FULL CAPABILITY AND A1083, HFEA 16-1/17/85A REQUIREMENTS AND HUMAN FACTORS (FOUG) AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES
	DOCUMENTATION SUPPORTING ISSUE SELECTION	A:083, HFEA 6-1/17/86A (FOUO)	A1083, HFEA 8-1/17/86A (FOUG)	HFEA 9-1	HFEA 16	HFEA 16-	HFE# 15-
	00 ddi){ S	A:083, (F0U0)	A1083, (FOUC)	A1033, (F0U0)	A1083, (F0U0)	A1083, (FOUC)	A1083, (F0U0)
	Issue	L.D IND AND IAZARD	IS EXTENT EFTINED.		FACTORS TIONS TOR THE	FACTORS TIONS FOR THE	FACTORS TIONS FOR THE
		INADEQUATE VENTILATION, HEATING OR COCLING COCLES AVVERSELY AFFECT CREM AND PASSENGER PERFORMANCE AND COULD CREATE A HEALTH HAZARD	CRASHWORTHINESS OF LHX IS DEFINED AS "MODIFIED" MIL-STD-1290, HOMEYER EXTENT OF MODIFICATION IS UNDEFINED	_ X X ₹	FULL CAPABILITY AND REQUIREMENTS AND HUMAN FACTOR AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	FULL CAPABILITY AND REQUIREMENTS AND HUMAN FACTOR AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTEMANCE ACTIVITIES	FULL CAPABILITY AND REQUIREMENTS AND HUMAN FACTOR: AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION ALANNING AND MAINTENANCE ACTIVITIES
	ALLEM DERIVED	ATE VENI OR COGI LY AFFEC ER PERFG	CRASHWORTHINESS OF LHX DEFINED AS "MODIFIED" MIL-STD-1290, HOWEYER OF MODIFICATION IS UND	STEADY STATE AND I LEVELS OF THE LHX AIR AND GROUND CRE PERFORMANCE AND MA HEALTH HAZARDS.	FULL CAPABILITY AN REQUIREMENTS AND HAND TRAINING CONSINANC NOT BEEN DEFICOMPUTER BASED MISS PLANNING AND MAINT	PABILITY MENTS AN INING CC IT BEEN C R BASED G AND MA	FULL CAPABILITY AN REQUIREMENTS AND H AND TRAINING CONSI HAVE NOT BEEN DEFI COMPUTER BASEO MISS ACTIVITIES AND MAINT ACTIVITIES
	AL	INADEQU HEATING ADVERSE PASSENG COULD C	CRASHWO DEFINED MIL-STD OF MODI	STEADY LEVELS AIR AND PERFORM HEALTH	FULL CAPABII RESUIREMENTS AND TRAININ HAVE NOT BEI COMPUTER BAY PLANNING ANI ACTIVITIES.	FULL CAPABI REQUIREMENT AND TRAININ HAVE NOT BE COMPUTER BA PLANNING AN ACTIVITES	FULL CAPABI REQUIREMENT AND TRAININ HAVE NOT BE COMPUTER BA PLANNING AN
	· · · · ·	THE LHX KENTAL ICIENT I AND I AND IBAT	DOES THE CRASHWORTHINESS OF CRASHWORTHINESS OF LHX IS THE LHX MEET ACCEPTABLE DEFINED AS "MODIFIED" STANDARDS FOR INJURY AND MIL-STD-1290, HOMEVER EXTENDED A WOODIFICATION IS UNDEFINED.	EL VE	FER AND 1475 FOR	WHAT ARE THE MANDOMER AND DERSONNEL BEQUIREMENTS FOR THE MISSION PLANNING/WAINTENANCE MORKSTATIONS?	WHAT ARE THE HUMAN FACIORS SPECIFICATIONS FOR DESIGN OF THE MISSION PLANNING/MAINTENANCE WORKSTATIONS?
	QUESTIC	SIGN OF ENVIRONN TEM SUFF THE CREN FROM COM S AND AL ELEME	ASHWORTH T ACCEPT OR INJUR ANCE?	E NC1SE PRESENT PERSONN OR CREA	E MANPONEQUIREME	E MANPON EQUIREME INTENANC S?	E HUMAN ONS FOR JON INTENANC S?
	CRITICAL QUESTION	DOES THE DESIGN OF THE LHX PROVIDE AN ENVIRONMENTAL CONTROL SYSTEM SUFFICIENT TO PROTECT THE CREW AND PASSEGUGERS FROM COMBAT CONTAMINANTS AND ENVIRONMENTAL ELEMENTS?	DOES THE CRASHMORTHINESS THE LHX MEET ACCEPTABLE STANDARDS FOR INJURY AND DEATH AVOIDANCE?	13 EXCESSIVE NOISE ENVIRONMENT PRESENT THAT MILL REDUCE PERSONNEL PERFORMANCE OR CREATE HEALTH HAZAROS?	WHAI ARE THE MANDOMER AND PERSONNEL REQUIREMENTS FOR THE MISSION PLANNING/MAINTENANCE WORKSTATIONS?	WHAT ARE THE MANPOWER AND PERSONNEL REQUIREMENTS FOR THE MISSION PLANNING/WAINTENANCE WORKSTATIONS?	WHAT ARE THE HUMAN FACIORS SPECIFICATIONS FOR DESIGN OF THE MISSION PLANNING/MAINTENANCE MORKSTATIONS?
	OPER-: SAMP CRITICA, WAINE: QUESTION NUMBER SUPT-3 CRITICAL QUESTION	DOC CON 10 2AS	DOE THE STA DEA	ENV PER PER ENV	MHA THE PLA MOR	WHA PER PLA WOR	WHA SPE OF PLA WOR
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	SMMP CRITICA. QUESTION NUMBER				12/1,218,	18/4.14	## #
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-X WANTSTAT JAMP CRITICA, QUESTION REPORT (1986 TY)
(XQUENTED ON CRITICALITY WITHIN MAPRINI DOWAIN)
OPERATOR = 1, MAINTAINR = 2, SUPPORT = 3
(INDEXED ON TYPECD + CSC)

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SMMP CRITICAL QUESTION NUMBER		0FER:1 MAIN:2 SUPT:3 CHITCA, QUESTION	ALEEN DERIVEL 1550E			400 AM		Paul Paka In Source Document	CALITY SCORE	Seek E Of Sout 'A	RISK MANDRINT DOMAIN STATES	IOMAIN STATES
æ 	-	MMAT TRAINING REQUIREMENTS AME GENERATED BY THE MISSION PLANNING/MAINTENANCE MORNSTATION?		A1083, HFEA 16-1/17/86A S (FOUO)	TRADOC	PRIOR TO 0T I.	A 10 83	P16 (F0U0)	as as	A1083 P. 16	HF - 1 NG	UNKES.
7.07	-	IS THE SINGLE CREMMENDER LHX MORE OR LESS SURVIVABLE THAN A TWO CREMMENDER AIRCRAFT?	IS THE SINGLE CREMMEMBER IS THE SINGLE CREW MEMBER LHX A1083. LHX MORE OR LESS SURVIVABLE MORE OR LESS SURVIVABLE THAN A (FOUO) THAN A TWO CREWMEMBER TWO CREW MEMBER AIRCRAFT?	A1083, HEA 21-1/17/86 1 (FOUO)	Ž.	F.	A1083	P21 (F0U0)	E	A1083 M HFEA A1003 P.21 P.R-35	3 35 35	PEND.
<b>4</b> 03	_	WHAT TRAINING FOR OPERAIORS AND WA: WAINEYS SHOULD TAKE PLACE AT THE UNIT?	WHAT TRAINING FOR OPERATORS WHAT ARE THE UNIT TRAINING A1983. AND WA.WINEYES SHOULD TAKE REQUIREMENTS FOR OPERATORS AND (FOUD) PLACE AT THE UNIT? NATURALISES IN TERMS OF NATIVELS, REQUALIFICATION, AND TACTICAL TRAINING?	A1383, HFEA 30-:/17/86 ( FOUO )	TRADOC	PRICR TO FSG	A 1083	P30 (F0UG)	<b>»</b> :	(d) A1083 HFEA P.30	ING	PEND TO A AP U VOL
90.	•	MILL THE TRAINING PLAN PRODUCE ENOUGH PEOPLE MITH THE RIGHT TRAINING TO SUPPORT THE LHX SYSTEM AS TT IS FIELDED?	IS THE TRAINING PLAN ADEQUATE A1083, HFEA 33-1/11/86 TO SUPPORT LHX FIELDING AT THE (FOUO) PROJECTED RATE?	A1083, HFEA 33-1/17/86 (FOUO)	PM/TRADOC	PRIOR TO FSD	A1083	P33 (FOUO)	Œ	A1083 HFEA D 33	TNG	DEND
60.5	-	HAVE ANY PREPLANNED PRODUCT IMPROVEMENTS BEEN EXAMINED FOR MANPRINT IMPLICATIONS?	HAVE ANY PREPLANNED PRODUCT PRODUCT IMPROVEMENT MUST BE IMPROVEMENTS BEEN EXAMINED FULLY INTEGRATED 19 ASSURE FOR MANPRINT IMPLICATIONS? IMPROVED SYSTEM PERFORMANCE.	A1083, k. EA 41-1/17/86A (FOUD)	æ.	START OF P31 PROGRAM	P1038	LHX TSM-ISSUES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING	<b>)</b>	A1083 M/H HFEA A1003 P.4: P.R-36	TMG	PEND RFP
80 0	<del>-</del>	CAN EMBEDGED TRAINING BE UTILIZED IN THE LHX? WILL EMBEDDED TRAINING REDUCE INSTRUCTOR REQUIREMENTS AND TAPROVE TRAINING ACCESSABILITY?	CAN EMBEDDED TRAINING BE MILL THE LHX DESIGN TAKE PIG38, LHX TSM-ISSUES UTILIZED IN THE LHX? WILL ADVANTAGE OF COMPUTER ASSISTED GENERATED FROM 3 DEC 1985 EMBEDDED TRAINING REDUCE TRAINING (EMBEDDED TRAINING) FT RICKER RETING A 1082, INSTRUCTOR REQUIREMENTS AND TECHNOLOGIES FOR INITIAL AND HFEA 38-1/17/86A (FOUC) MARROVE TRAINING CVIT TRAINING?	PIG38, LHX TSM-ISSUES GEMERATED FROM 3 DEC 1985 FT RECKER HEETING A1082, HEEA 38-1/17/86A (FOUO)	ž.	SS	£1083	HFEA P38 (FQUO)	¥	(e) HFEA P.38	TNG	PEVS RFD
1.08/3.03/3.04	-	IS THE AVIATOR TO OPERATE HOW DO PSYCHOMOTOR AND AS THE SYSTEM INTEGRATOR OR COGNITIVE PERFORMANCE THE COMMANDER? REQUIREMENTS FOR LHX C MITH THOSE OF AIRCRAFT REPLACED OR OTHER AIRC THE DOD INVENTORY?	HOW DO PSYCHOMOTOR AND COGNITIVE PERFORMANCE REQUIREMENTS FOR LHX COMPARE WITH THOSE OF AIRCRAFT BEING REPLACED OR OTHER AIRCRAFT IN THE DOD INVENTORY?	(FOUO)	PM/HEL	RF P	P1036	LHX MAMPRINT MANAGEMENT PLAN ANNEX E, P. E-17	×	M A1003 P.R-35 9 A.B.	£ S	PE4D.

LAX MARPRINI SMMF CHITICAL QUESTION REPORT (15NE)-7)
(SEQUENCED ON CRITICALITY MITHIN MARPRINI GONAIN)
SERATOR = 1, MAINTAINER = 2, SUPPORT = 3
AMERICAL TANGWOOD M PROGRAM - PERFORM

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	PAGE/PARA IN SOURCE DOCUMENT	LHX MANPRINT MANAGEMENT PLAN ANNEX E, P. E-17	LHX MANDRINI MANAGEMENT PLAN ANNEX E, P. E-17	·		ROC PAGE 6 PARAGRAPH L 9	OGO VI PAR I  "TRAINING WILL BE DESIGNED, VALIDATEC, AND ADMINISTERED FOR OPERATOR. MAINTENANCE, AND SUPPORT PRESONNEL IN ACCORDANCE WITH US ARMY TRAINING AND DOCTRINE COMMAND (TRADOC), US ARRY MAIERIEL COMMAND (AMC) AND
SC0)	SOURCE DOCUMENT I DNO	P 1036	P1036	P1038	P1038	R1003	100
(INDEXED ON TYPECD + CSCD)	WHEN RESOLVED	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	RFP	PUBLICATION OF CTEA	11	PRIOR 10 OT 1.1	OTEA
( INDEXE		8 HEL 8	PM/HEL RI	78.800.2 5.3	USAARi OT	TRALOC PR	TRADO PUBC. CTEA
	BOCCIMENTATION SUPPORTING ISSUE SELECTION	A1083, HFEA 19-1/17/86 (FOUO)	A1083, HFEA 19-1/11/86 (FOUO)	21039, LYM TSW ISSUES GENERATED RROW 3 DEC 1985 FT RUCKER MEETING	P1038, LHX TSM-153UES GENERATED FROM 3 DEC 1985 FT RUCKER MEETING	R1003 ROC	P1038, LHX TSM-:SSU5S REDUCE GENERATED FROM 3 DEC 1985 FT RUCKER MEETING
	ALLEN DERIVED ISSUE	□ C	HOW DO PSYCHOMOTOR AND COGNITIVE PERFORMANCE REGULEMENTS FOR LHX COMPARE WITH THOSE OF AIRCRAFT BEING RELEGO OR OTHER AIRCRAFT IN THE DOS INVENTORY?	MMAT IS THE MOST COST SFECCIVE AND TANANO SFFECTIVE NO FART-TACK, FULL MISSION SIMULATOR AND OPERATIONAL AIRCRAFT IN INITIAL ENTRY LHX PILOT TRAININGS	IS THERE DEGRADATION OF PILOT PEFFORMANCE OR ARE THERE (COMG-TERM HEALTH IMPLICATIONS STEMMING FROM CURRENT LAX DESIGN?	MHAT IS THE NUMBER OF SKILLS IN MAN WHAT SKILL LEVELS ARE RECUIRED FOR CURRENT LIGHT FLEET OPERATIONS? LHX SHOULD REDUCE THIS.	HOW CAN THE USE OF NEW FECTION TECHNOLOGY SIMPLIFY AND REDUCE GIRAINING RESOURCES?
	GPER-: MAIN=2 SUDT=3 CR17/CAL QUESTION	CAN AN AVIATOR WITH THE INTELLIGENCE AND SKILL LEVELS OF CURRENT AVIATORS RAD SKYCEPED FULLE RECRUITS EFECTIVELY OPERATE THE ADVANCED SYSTEMS?	MHAT ADDITIONAL SKILLS ARE REQUIRED OF THE LHX AVIATOR?				CAY EMBEDDED TRAINING BE P JILLIZED IN THE LHX? HILL T EMBEDDED TRAINING REDUCE INSTRUCTOR REQUIREMENTS AND IMPROVE TRAINING ACCESSABILITY?
	GPERST MAINS2 SUPTS3	-	-			-	
	SIMP CRITICAL QUESTION NUMBER	3 03/3 04	3.04				· · · · · · · · · · · · · · · · · · ·

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## LEX MANPRINT SHAP CRITICAL QUESTION REPORT (15REP-1) (SEQUENCED ON CRITICALITY WITHIN MANPRINT DOMAIN OPERATOR = 1, MAINTAINER = 2, SLPPORT = 3 (INDEXED ON TYPECO + CSCC)

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MANPRINT DOMAIN STATUS	PEND T OA AP U VOL IX	SEND.	PEND.	PEND.T OA AP U VOL IX	PEND.T 04 AP U VOL 1X
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CRITI- SOURCE CALITY OF SCORE SOUL'N		A1083 HEA P 4	A 1083 HFEA P. S	A 1083 HFEA P. 17	
CRITI- CALITY SCORE				سہ	ب.
* · · · · · · · · · · · · · · · · · · ·	060 VI PAR I TRAINING MILL BE JESIGNED, VALIDATED, AND ADMINISTERED FOR ALINTENANCE, AND SUPPORT PERSONNEL IN ACCORDANCE WITH US ACCORDANCE COMMAND ACCORDANCE AND				TOA, APPENDIX U, VCL L IX, TRAÎNING P U-35
PAGE/PARA IN SOURCE DOCUMENT	OGO VI. PAR I TRAINING MILL BE CESIGNED, VALIDATE AND ADMINISTERED F DERATOR, ANINIEANNCE, AND ANINIEANNCE, AND ACCORDANCE WITH US ACCORDANCE ACCOR	: (626 (626	(000	; (2002)	TOA, APPENDIX U, VG IX, TRAINING P U-3S
0 8 0 0	OGO VI. P TRAINING JESIGNED, AND ADMIN JPERATOR, MAINTENAN SUPPORT PI ACCORDANC ARMY TRAIL DOCTRINE (TRADOC), MATERIEL (AMC) AND APPROPRIA	COMPANDS P& (EQUO)	PS (F0U0)	P17 (F0UC)	10A, 11X, 11X, 11X, 11X, 11X, 11X, 11X, 11
SOURCE DOCUMENT 1 DNO	F) 001	1083	A 1083	£1083	A 1004
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WHEN RESOLVED	PUBLICATION OF CTEA			0R:0R TO FSD	0R TO F
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RESPONSIBLE AGENCY	TRADOC	USAARL	æ.	TRADOC	TRADOC
3 1	1985		10		A1004, TOA, APPENDIX U, VOL TRADOC IX, TRAINING P U-35
10 s	: 55UES # 3 DEC TING	A1083, HřEA 4-1/11/85 (FOUO)	<b>A1083</b> , HFEA 5-1/17/86 (FOUD)	A1083, HFEA 17-1/11/86A (F0UO)	PPENDÍX P U-35
DOCUMENTATION SUPPORTING ISSUE SELECTION	P1038, LHX TS 156 GENERATED FROM 31 FI RUCKER MEETING	Hrea 4	HFEA S	HFEA 1	A1004, TOA, APPENDI; IX, TRAINING P U-35
"	DF MEM P1038, LHX TS 'SSUES FFY AND REDUCE GENERATED FROM 3 DEC 1985 ES? FT RUCKER MEETING FT RUCKER MEETING	▲1083, (FOUO)	A1083, (FOUO)		A1004, IX, TR
ALLEN DER:VED 15SI	O REDUCI	WHOLE E AN The	HING N 1301 HEALTH	AS THE LHX ENTERS THE INVENTORY CURRENT TRAINING ATREMAT MAY BE REPLACED BY LHX. THE LHX TRAINING PROGRAM/SYSTEM/ATREMAT BE ESTABLISH: TO INCLUDE IERK.	ANEL OF ED WITH
ALLEN DERIVED 155	OF NEW CLEY AND CES?	URE TO MAY HAVI	TINGUISHING SE HALON 130 ADVERSE HEAL ONNEL:	RS THE NT TRAIS REPLACE RAINING ATRCRAFTO	AINING R PERSON STATION
EN DER:	HOM CAN THE USE OF 1 FECHNOLOGY SIMPLIFY TRAINING RESOURCES?	ED EXPOS BRATION IBLE IMP	FIRE EX OFTEN U M HAVE ON PERS	HX ENTE SY CURRE MAY BE IF LHX T ISYSTEM/ ILISH(1)	THE TRIENTS FOR RCRAFT
AL.	HOM CAM THE USE I TECHNOLOGY SIMP. TRAINING RESOURCE	PROLONGED EXPOSURE TO WHOLE 3CP VIRKATION MAY HAVE AN UNDESTRABLE IMPACT ON THE AIRCREM	CURRENT FIRE EXTINGUISHING SYSIEMS OFTEN USE HALON 1301 WHICH CAN HAVE ADVERSE HEALTH EFFECTS ON PERSONNCL.	AS THE LHX ENTERS THE INVENTORY CURRENT TRAINING ATRCRAFT MAY BE REPLACED BY THE TABLAIN. THE LHX TRAINING THE TROGRAM/SYSTEM/AIRCRAFT CHO BE ESTABLISH: TO INCLUDE IERK.	WHA" ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF OTHER AIRCRAFT STATIONED WITH THE LHX?
	.5.		5:		-
UP.R.: SUPI.3 CRITICAL QUESTION	HOM CAN THE USE OF NEW TRAINING TECHNOLOGY SIMPLIFY AND REDUCE TRAINING RESOURCES?	IS WHOLE BODY VIBRATION DEFRIMENTAL TO CREW PERFORMANCE AND MISSION ACCOMPLISHMENT?	IS THERE A REASCHABLE POTENTAL FOR EXPOSURE OF OCCUPANTS TO EXCESSIVE QUANTITIES OF HALON 1301 FIRE EXTINGUISHINS AGENTS?	SHOULD THE LHX SE USED IN INITIAL ENTRY ROTOR WING TRAINING?	WHAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF OTHER AIRCRAFT STATIONED WITH THE LHX?
CRITICAL QUESTION	HOM CAN THE USE OF TRAINING TECHNOLOGY SIMPLIFY AND REDUCE TRAINING RESOURCESS	IS WHOLE BODY VIBRA DEFRIMENTAL TO CREW PERFORMANCE AND MISS ACCOMPLISHMENT?	RE A REI JAL FOR NTS TO E TIES OF CTINGUES	THE LIP L. ENTRY NG?	WHAT ARE THE T REQUIREMENTS F OF OTHER AIRCE WITH THE LHX?
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(SEQUENCED UN CRITICALITY ALTHIN MANDRINT DUMAIN)

OPERATOR = 1, MAINTAINER = 2, SUPPORT = 3

(INDEXED ON TYPECD + CSCO)

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	CALITY OF SCORE SOUL'N RISK	A 1083 HFEA P7	A1083 HFEA P7	A 1083	A1083 M/H HFEA A1081 P.25 P.8-9 H A1003 P.R-67 P.R-67 P.R-67 P.R-67 PAR C	A 1083 HFEA P29	A1083 HFEA P.33
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	PAGE/PARA IN SOURCE DOCUMENT	P7 (F0U0)	P7 (F0U0)	P10 (F0U0)	P25 (F0UO) -	P29 (F0UO)	P33 (F0U0)
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	DOCUMENTATION SUPPORTING ISSUE SELECTION	A1083, HFEA 7-1/17/86A (FOUO)	A1083, HFEA 7-1/17/86A (FOUO)	A1083, HFEA 10 1/11/86 (FOUC)	(FOUG)	(FOUO)	UN ADEQUATE A1083, HFEA 33-1/17/86 .Ding at the (FOUO)
	ALLEN DERIVED ISSUE	DOES THE LHX DESIGN ALLOM NBC AND COLD MEATHER FOR MAINTEMANCE WHILE PROTECTIVE CLOTHING CAN HAVE MEATING PROTECTIVE GARMENTS AN ADVERSE IMPACT ON SOLDIER UNGER ALL CLIMATIC PERFORMANCE	NBC AND COLD WEATHER PROTECTIVE CLOTHING CAN HAVE AN ADVERSE IMPACT ON SOLDIER PERFORMANCE.	LASERS AND IR RADIATION CAN PRODUCE VISUAL DAMAGE DURING COMBAT AND TRAINING RF AND MICROMANE ENOSURE ARE POTENTIAL HEALTH HAZARDS.	MMAT SYSTEMS ARE AUTOMATED AND A1083, HFEA 25-1/17/86A HOW SPECIFIC AUTOMATION (FOUO) ACCOMODATES SINGLE CREW MEMBER OPERATION HAS NOT BEEW COMPLETELY ASSESSED. HF DESIGN STANDAROS DO NOT FULLY ADDRESS ISSUES AND TRADE OFFS IN AUTOMATION AND COGNITIVE OVERLOAD.	AN INTEGRATED APPROACH TO CREW A1383, HFEA 29-1/17/86A STATION AND DISPLAY LIGHTING (FOUO) IS MEDED. LIGHTING FOR MAINTEMANCE AND FARP HAS NOT BEEN FULLY EVALUATED.	IS THE TRAINING PLAN ADEQUATE A1083, 10 SUPPORT LHX FIELDING AT THE (FOUO) PROJECTED RATE?
	OPER=! MAIN=2 SUPT=3 CRITICAL QUESTION	DOES THE LHX DESIGN ALLOW FOR MAINTENANCE WHILE WEARING PROTECTIVE GARNENTS UNGER A.L. CLIMATIC CONDITIONS?	IS PERSONAL AND PROTECTIVE EQUIPMENT COMPATIBLE MITH THE TASK AND THE EQUIPMENT INTERFACES TO PERMIT PERSONNEL TO ACCOMPLISH FUNCTIONS?	IS THE PROTECTION OF PERSONNEL FROM LASERS, RADIC "RECURBICY AND MICROMANE SUFFICIENT TO PRECLUDE "E4." ** SAPETY HAZARDS?		MHAT LIGHT IS REQUIRED TO Facilitate Maintenance?	WILL THE TRAINING PLAN PRODUCE ENOUGH PEOPLE WITH THE RIGHT TRAINING TO SUPPORT THE LHX SYSTEM AS IT IS FIELDED?
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	SWMP CRITICAL QUESTION NUMBER	5 05/7.03	7 03	. 06		5.03	90 3
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LHX MANPELNI SHMP CRITICAL QUESTION REPORT (ISREP-1)
(SEQUENCED ON CRITICALLY WITHIN MANPENT DOMAIN)
OPERATOR = 1, MAINTAINER = 2, SUPPORT = 3
(INDEXED ON TYPECO + CSCO)

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4.09/2.058	~	CAN THE AVAILABLE MAINTAINER PERSONNEL BE TRAINED TO MAINTAIN THE LAXT	CAN ALL UNIT MAINTENANCE FUNCTIONS BE PERFORMED BY NO MORE THAN THREE DIFFERENT MOS. INC.UDING CREW CHIEF?	R1003 ROC	PM/1LS	PRIOR TO FSO	R1003	ROC PAGE 6 PARAGRAPH M 3	# T	A 1082 "HARDM AN"	PERSONNEL LRU	PEND
2 05R	~	CAN ALL UNIT MAINTENANCE FUNCTIONS BE PERFORMED BY NO MORE THAN THREE DIFFERENT MOS, INCLUDING CREW CHIEF?	CAN ALL UNIT MAINTENANCE FUNCTIONS BE PERFORMED BY NO MORE THAN THREE DIFFERENT MOS, INCLUDING CREW CHIEF?	R1003 ROC	PM/ILS	PR10R TO FSD	R1003	ROC PAGE 6 PARAGRAPH M 9	X r		PERSONNEL LRU	UNRES
50 1	~	IS EXCESSIVE NOISE ENVIRONMENT PRESENT THAT WILL REDUCE PERSONNEL PERFORMANCE OR CREATE HEALTH HALARDS?	STEADY STATE AND IMPULSE NOISE A1083, HFEA 9-1/17/86A LEVELS OF THE LHX MAY DEGRADE (FOUO) A:R AND SROUYD SREMS' PERFORMANCE AND MAY POSE HEALTH HAZAROS.	E A1083, HFEA 9-1/17/86A (FOUO)	¥	F	A1083	P9 (FOUO)	×	A1083 HFEA D. 9	u.	PEND.
2,04/3,02/1,218	2	MHAT ARE THE MANPOWER AND PERSONNEL REQUIREMENTS FOR THE WISSION PLANNING/MAINTENANCE MORKSTATIONS?	FULL CAPABILITY AND A1083, HFEA 16-1/17/86A REQUIREMENTS AND HUMAN FACTORS (FOUC) AND TRAINING CONSIDERATIONS AND TRAINING CONSIDERATIONS COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	A1083, HřEA 16-1/17/86A 5 (7000)	TRADOC	PRIOR TO 07 11	A1063	P16 (F0U0)	×	A1083 P. 16	<u>4</u>	PEND.
2.04/3.02/4 :48	8	WHAT ARE THE MANPOWER AND PERSONNEL REQUIREMENTS FOR THE WISSION PLANNING/MAINTENANCE MORKSTATIONS?	FULL CAPABILITY AND  REQUIREMENTS AND HUMAN FACTORS (FOUO) AND TRAINING CONSIDERATIONS AND TRAINING CONSIDERATIONS COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.	A1083, HFEA 16-1/17/86A 5 (FOUO)	TRADOC	PRIOR TO 07 11	A1083	P16 (F0UO)	z	A 1083 P 16	TNG	PEND RFP
4.03	~	WHAT TRAINING FOR OPERATORS WHAT ARE THE UNIT AND MAINTAINERS SHOULD TAKE REQUIREMENTS IN TER PLACE AT THE UNIT? MAINTAINERS IN TER INTTAL SKILLS, REQUALITICATION, A	WHAT TRAINING FOR OPERATORS WHAT ARE THE UNIT TRAINING A1083, AND MAINTAINERS SHOULD TAKE REQUIREMENTS FOR OPERATORS AND (FOUO) PLACE AT THE UNIT? MAINTAINERS IN TERMS OF INITIAL SKILLS, REQUALIFICATION, AND TACTICAL TRAINING?	A1083, HFEA 30-1/17/86 ) (FOUO)	TRADOC	PRIOR TO FSD	A1083	P30 (F0UC)	æ	A 1083 HFEA P. 30	JNG	PEND.T. OA AP U VOL IX

Page No 32,09787 SEQUENCED ON CRITICAL QUESTION REPORT (15REP-T) (SEQUENCED ON CRITICALITY MITHIN MANPRINT DOMAIN) DESARGE : , MAINTAINER = Z, SUPPORT = 3

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	DOCUMENTATION SUPPORTING ISSUE SELECTION	(FOUO)	ISSUES 3 DEC 1	A1093, HFEA 40-1/:7/85 (FOUO)	7;1/85	/17/85	17/86
	DOCUMENTATION SUPPORTING ISSUE SELECTION	FEA 41-	AX 754- D FROM	EA 40-	EA 40-1	A 40-1.	4 33-1/
	SUPPO Suppo	A1083, H (FOUO)	P1038, LHX TSM-1SSUES GENERATED FROM 3 DEC: FT RUCKER MEETING	A1093, HF (FOUO)	A1083, HFEA 40-1/;7/85 (FOUC)	A1083, HFEA 40-1/11/85 (FOUG)	A1083, HFE& 33-1/17/86 (FOUO)
			57ED GE 3 ) FT 10	ν	v		
	ALLEN DERIVED ISSUE	PRODUCT IMPROVEMENT MUST BE FULLY INTEGRATED TO ASSURE IMPROVED SYSTEM PERFORMANCE	MILL THE LHX DESIGN TAKE P1038, LHX TSM-ISSGES ADVANTAGE OF COMPUTER ASSISTED GENERATED FROM 3 DEC 1905 TRAINING (ENBEDDED TRAINING) FT RUCKER MEETING TECHNOLOGIES FOR INITIAL AND UNIT TRAINING?	DESIGN HUMAN NCE (E.G. ECTIVE MATERIALS	DESIGN HUMAN WCE (E.G. ECTIVE MATERIALS	DESIGN HUMAN VCE (E.G. ECTIVE MATERIALS	D LEVEL IIT LEVEL I DURING D AND INHE ONS ARE
	FRIVED	OVEMENT LTED TO EM PER	MILL THE LHX DESIGN TAKE ADVANTAGE OF COMDULER ASSISTANTING (ENBEDDED TRAINING) FOR TRAINING (ENBEDDED TRAINING) UNIT TRAINING?	SYSTEM USIDER I INTENAN PROTEI	SYSTEM I ISIDER P NYENANC PROTEC OSITE P	YSTEM D SIDER H MTENANC PROTEC DSITE M	ES TWO IN THE ON
	ALLEN DERIVED	T IMPRO Integra Ed syst	MILL THE LHX D ADVANTAGE OF CI TRAINING (EMBEI FECHNOLOGIES FUNIT TRAINING?	DOES THE LHX SYSTEM ASEQUATELY CONSIDER FACTORS IN MAINTENA ACCESSIBILITY, PROT CLOTHING, COMPOSITE REPAIR, ETC)?	E LHX S ELY CON IN MA! BILITY, 6, COMP	ELY CON- IN MAIN 31LITY, 1, COMP(	ACT DOG INCE HAN IONAL A NCE TRA SE IN*
	1	HAVE ANY PREPLANNED PRODUCT PRODUCT IMPROVEMENT MUST BE IMPROVEMENTS BEEN EXAMINED FULLY INTEGRATED TO ASSURE FOR MANPRINT IMPLICATIONS? IMPROVED SYSTEM PERFORMANCE		DOES THE LHX DESIGN ALLOW DOES THE LHX SYSTEM DESIGN FOR MAINTENAMCE WHILE ADEQUATELY CONSIDER HUMAN WEARING PROATECTIVE FACTORS IN MAINTENAMCE (E.G. GARMENTS UNDER ALL CLIMATIC ACCESSIBILITY, PROTECTIVE COMOITIONS? REPAIR, ECCY	DOES THE LHX DESIGN PROVIDE DOES THE LHX SYSTEM DESIGN BIT, BITE, AND ATE WHICH ADEQUATELY CONSIDER HUMAN THE MAINTAINER CAN USE AND FACTORS IN MAINTEMANCE (E.G. MUDERSTAND?  CLOTHING, COMPOSITE MATERIAL REPAIR, ETC)?	DOES THE LHX SYSTEM DESIGN ADEQUATELY CONSIDER HUMAN FACTORS IN MAINTENANCE (E.G. ACCESSIBILITY, PROTECTIVE CLOTHING, COMPOSITE MATERIAL REPAIR, ETC)?	WHAT IMPACT DOES TWO LEVEL MAINTENANCE HAVE ON INSTITUTIONAL AND UNIT LEVEL MAINTENANCE TRAINING DURING LHX "PHASE IN" PERIOD AND WHEN STEADY STATE CONDITIONS ARE REACHED?
	16 13 61 71	NAVE ANY PREPLANNED PRODUCT IMPOVEMENTS BEEN EXAMINED FOR MANPRINT IMPLICATIONS?	<b>≟</b> §	LLOW	0E		ಪ
	CRIFICAL QUESTION	NAVE ANY PREPLANNED PRODUCT IMPOVEMENTS BEEN EXMINED FOR MANPRINT IMPLICATIONS?	RAINING E LHX? ING REC UTREMEN	ESIGN A E WHILE 27 IVE ALL CL	SIGN PI	AINTAIN MATERI ?	ECT ON RAINING IT THO I
	FICAL Q	IY PREPI MEUTS (	EDDED 1 D IN TH D TRAIN TOR REG TRAINI	E LHX D ATENANC PROATE UNDER	E, AND TAINER ND?	11.174/M MPOSITE SIDERED	HE EFF. ONAL TI CONDUCTOR NCE TRA OUSLY C
	CB11	HAVE AN IMPROVE FOR MAN	CAN EMBEDDED TRAINING BE UTILIZED IN THE LINZ? WIN EMBEDDED TRAINING REDUCE INSTRUCTOR REQUIREMENTS A IMPROVE TRAINING ACCESSABILLITY?	DOES THE LHX DESIGN ALLOW FOR MAINTENANCE MILLE WEARING PROATECTIVE GARMENTS UNDER ALL CLIMATI CONDITIONS?	DOES THE LHX DESIGN PROVID BIT, BITE, AND ATE WHICH THE MAINTAINER CAN USE AND UNDERSTAND?	MAS THE REPARABILITY/MAINTAINABILI TY OF COMPOSITE MATERIALS BEEN COMSIDEREO?	MMAT IS THE EFFECT ON INSTITUTIONAL TRAINING OF HAVING TO COMDUCT TWO LEVEL MAINTAINANCE TRAINING THE SIMULTANEOUSLY DURING THE LHX PHASE-IN PERIOD?
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.4x WANPRINT SWAP CRITICAL QUESTION REPORT ((SREP-))
(SEQUENCED ON CRITICALITY WITHIN MANPRINT DOMAIN
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(INDEXED ON TYPECD + CSCD)

SWEE CATTER QUESTION NUMBER		OPER-1 MAINES SUPTES CRITICAL QUESTION	ALLEN DERIVED 155UE	DOCUMENTATION SUPPORTING ISSUE SELECTION	RESPONSIBLE AGENCY	RESPONSIBLE AGENCY WHEN RESOLVED	SOURCE JOCUMENT IDMO	PAGE/PARA IN SOURCE DOCUMENT	CRITI- CALITY SCORE	CALITY OF SCORE SOUL'N RISK	K MANPRINT	MANPRINT DOMAIN STATUS
\$0 <b>3</b>	~	HHAT IS THE EFFECT ON UNIT FRAINING?	NHAT IMPACT DOES TWO LEVEL NAINTENANCE HANE ON INSTITUTIONAL AND UNIT LEVEL MAINTENANCE TRAINING DURING LHX "PHASE IN" PERIOD AND WHEN STEADY STATE CCNDITIONS ARE REACHED?	A1083, HFEA 33-1/17/86 (FOUD)	PM/ILS	PRIOR TO PRODUCTION	A1083	P33 (FOUO)	<b>x</b>	A 1083 HFEA P 33	<u>F</u>	PEND
7.09	~	WMAT WILL BE THE EFFECT OF FATIGUE/S19ESS ON LHX MAINTENANCE?	WILL THE FATIGUE AND STRESS A1083, HFEA 39-1/17/86A FROM THE MAINTENANCE BURDEN OF (FOUO) SUSTAINED CONTINUOUS DPERATIONS ADVERSELY AFFECT MISSION ACCOMPLISHMENT?	A1083, HFEA 39-1/17/86A (FOUO)	<b>₹</b>	11	A1083	P39 (F0UO)	*	A1083 HFEA D 35	<b>±</b>	PEND
50.5	61	CAN THE AVAILABLE MAINTAINER PERSONNEL BE TRAINEG TO MAINTAIN THE LHX?	ANALYSES OF MAINTEMANCE A1034, TOA, APPENDIX U., VO TRAINING ARE COMPLICATED BY IX, TRAINING P.D-12 PARA THE PROSPECT OF ALTERATIONS IN "MAINTENANCE TRAINING" AND MAINTENANCE MOS'S, 2-LEVEL P. U-28, PARA 4. HAINTENANCE AND HARDWARE INNOVATIONS.	A1034, 10A, APPENDIX U., VOL PM-1LS IX, TAAINING P U-12 PARA 4 "MAINTENANCE TRAINING" AND P U-28, PARA 4.	PM-1LS	PRIOR TO OT :1	7:835	TOA, APPENDIX U, VOC. IX, TRAINING P U-12. PARA, 'MAINTENANCE TRAINING' AND P U-28, PARA 4.	<b>s</b> :		T NG	PEND.T OA AP U VOL IX
2.01/6.03	~	ARE THERE ENOUGH PEOPLE IN THE LIK UNITS TO SUPPORT, MAINTAIN AND OPERATE THE SYSTEM?	THE AMOUNT OF NON I TASKS PER INDIVIDUA MAINTAINER MAY INCI MAINTENANCE POPULAT DECREASES.	MAINTENANCE A1083, HFEA 31-1/17/86 NL REASE AS THE TION	PM-1LS	11 12	A1004	TJA, APPENDIX U, VOL IX, TRAINING P U-19. PARA. PARA 4.	<b>≋</b> ⊒''	A 1083 HFEA P. 31	TRG	PEND. T OA AP U VO.: 1X
	2		MHAT IS THE NUMBER OF SKILLS AND WHAT SKILL LEVELS ARE REQUIRED FOR CURRENT LIGHT FLEET OPERATIONS? LHX SHOULD REDUCE THIS.	R1603 ROC	TRAGOC	PRIOR TG OT 11	R:003	RIC PAGE 6 PARAGRAPH 9	 #=		PERSONNEL	PERSONNEL SKILL PEND.
4.02/5.01	~	WILL THE USE OF METRIC TOOLS AND MEASUREMENT ADVERSELY AFFECT MAINTENANCE TRAINING?	MHAT IS THE IMPACT OF THE USE OF METRIC MEASURE ON MAINTENANCE AND MAINTENANCE TRAINING?	A1083, HFEA 23-1/17/86 (FOUO)	Œ	11	A1083	P23 (F0U0)		A1083 HFEA P.23	HF-1NG	RES.

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SGURCE OF SOUL'N RISK	m ∞ •< m		A1683 4F54 P 46		63 et vi	EE ≼ ∪.	A1083 HFEA P.33
SSTITE SOURCE CALITY OF SCORE SOUL'N	A1083 HFEA P 23		A 10.83		A 1083 P 25 4	A1083 HFEA P.3C	A108; HFEA P.33
-	-	. VOL 1	I	>	•	<b>≇</b> DEC	<b>E</b> .
PAGE/PARA IN SOURCE DOCUMENT	P23 (F0U0)	TOA, APPENDIX L. VD. IX, TRAINING P U-35	P14 (FOUC)	ROC PASE F-9 PARAGRAFH 7.C	P29 (F0UG)	LHX 15M-15SUES GENERATED AT 3 DEC 1985 FT RUCKER MEETING	P33 (F0UO)
SQURCE DOCUMENT 1 DNC	A1083	A 1004	A1083	A1063	A:683	P1038	A1083
WHEN RESOLVED	11	PRIOR TO FIELDING A1004	:: 13	PR:04 TC PR:00CTTON	FSc	PR10R TO FSD	PR10R TO FSD
RESPONSIBLE AGENCY	¥.	OL TRADOC	133 SOJ	5. C.	ž.	TRADOC	PM/TRADOC
DOCUMENTATION SUPPORTING ISSUE SELECTION	A1083, HFEA 23-1/11/86 (FOUO)	A1004, 104, APPENDIX U, VOL TRADOC IX. TRAINING P U-35	A1083, HFE2 44-1/:7/864 (FGUO)	R1503 R00	A1083, HFEA 29-1/17/86A (FOUO)	A1083, HFEA 30-1/11/86 (FOUO)	ADEQUATE A1083, HFĒA 33-1/17/86 NG AT THE (FOUO)
ALLEN DERIVED ISSUE	WHAT IS THE IMPACT OF THE USE OF METRIC MEASURE ON MAINTENANCE AND MAINTENANCE TRAINING?	MHAT ARE THE TRAINING MHAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL REQUIREMENTS FOR PERSONNEL OF OF OTHER AIRCRAFT STATIONED OTHER AIRCRAFT STATIONED MITH MITH THE LHK?	REQUIRED TURN AROUND TIME IN FARP IS 15 MINUTES WITHOUT GHE. REARMINS IS TO BE DONE WITH 2 SOUDIERS PER AIRCRAFT.	WILL THE LARGER LHX FLEET AESULT IN AN INCREASE IN THE TOTAL NUMBER OF PERSONNEL REQUIRED TO OPERATE AND ADMINISTER COMPLEX LHX TRAINING DEVICES?	AN INTEGRATED APPROACH TO CREW A1083, HFEA 29-1/17/86A STATION AND DISPLAY LIGHTING (FOUO) IS NEEDED. LIGHTING FOR MAINTENANCE AND FARP HAS NOT BEEN FULLY EVALUATED.	WFAT TRAINING FOR OPERATORS WHAT ARE THE UNIT TRAINING A1083, HFEA 30-1/11/86 AND MAININGS AND (FOUO) PLACE AT THE UNIT? MAINTAINERS IN TERMS OF INTER UNIT? INTIAL SKILLS, REQUALIFICATION, AND TACTICAL	IS THE TRAINING PLAN ADEQUATE A1083, TO SUPPORT LHX FIELDING AT THE (FOUO) PROJECTED RATE?
CRITICAL QUESTION	WIL: THE USE OF METRIC TOOLS AND MEASUREMENT ADVERSELY AFFECT MAINTENANCE?	WHAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF OTHER AIRCRAFT STATIONED WITH THE LHX?	MILL THE DESIGN OF THE LHX ALLOM IT TO BE SERVICED AT THE FARP BY ONLY THG SQUITES WITHOUT GROUND HAYDLING EQUIPMENT IN 15 WINCIES?		MHAT LIGHTING IS REQUIRED TO FACILITATE FARP ACTIVITIES?	WFAT TRAINING FOR OPERATORS AND MAINTAINERS SHOULD TAKE PLACE AT THE UNIT?	WILL THE TRAINING PLAN PRODUCE ENDUGH PEOPLE WITH THE RIGHT TRAINING TO
OPERALL MATINE2 SUPTES	~	C4	m	es)	m	m	m
SMMP CRITICAL QUESTION NUMBER	5 01	38.138	u s		5.04	د . 03	₹.06

OX MAMPRINT SHIP CRITICAL QUESTION REPORT (ISRE-1)
(SEQUENCED ON CRITICALITY WITHIN MAMPRINT DOWAIN)
OPERATOR = 1, MAINTAINER = 2, SLP-KKT = 3
(INDEXED ON TYPEED + CSCD)

OMAIN STATUS	PEND	RES PP S	PEND. 7 OA AP U VOL
CRITI- SOURCE CALITY OF SCORE SOUL'N RIS, MANPRIN' DOMAIN STATUS	Έ	풒	TNG
CRITI- SOURCE CALITY OF SCORE SOUL'N RIS	A1083 HFEA P.39	R1010 RFP P2.3.2 .8.8.2	
" "	x	<b>s</b>	v, Vo∟ L ∪~35
SOUNCE PAGE/PARA DOCUMENT IN SOUNCE IDNG DOCUMENT	P39 (F0U0)	KH ISSUES, P-16	TOA, APPENDIX U, VOL L IX, "RAINING P U-35
	A 1083	A1075	4 1006 4 1006
RESPONSIBLE AGENCY WHEN RESOLVED	1:	RFP	PRIOR TO FIELDING A1004
	<b>ĕ</b>	£	
DUCJAFNATON SUPPORTING ISSUE SELECTION	A1083, HFEA 39-1/17/86A (FDUD)	A1075, HH 1SSUES, P-16	AIGD4, TOA, APPENDIX D, VOL TRADCC IX, TRAINING P U-35
AEn DERIVED 1850:	MILL THE FATIOUE AND STRESS A1083, HFEA 39-1/17/86A FROW THE MAINTENANCE BURDEN OF (FOUO) SUSTAINED CONTINUOUS DPEATIONS ADVENSELY AFFECT MISSION ACCOMPLISHMENT?	OPTIMAL PATIENT CARE NOT PROVIDED. NO OXYGEN,COOLING, OR OVER PRESSURE PROVIDED FOR PATIENTS	MHAP ARE THE TRAINING MHAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF CTHER ALRCRAFT STATIONED OTHER ALRCRAFT STATIONED OTHER ALRCRAFT STATIONED MITH ALT. THE LAX?
OPER:: SMMP CRITICAL MAIN=2 QUESTION NUMBER SUPT=3 CRITICAL QUESTION	HOW MUCH WILL STRESS AND FATTSJE AFFECT MISSIGN ACCOMPLISHMENT?		MHAT ARE THE TRAINING MHAT ARE THE TRAINEREQUIREMENTS FOR PERSONNEL REQUIREMENTS FOR OF THE AIRCRAFT STATIONED OTHER AIRC
0PER=:	m	m	174
SMMP CRITICAL QUESTION NUMBER	34		æ. •

## ISSUES, Impact, and Proposed Solution Reported by TYPECODE and CRITICALITY SCORE Sequence

The following is a listing of the Allen derived Issue Statement; the impact of the issue; the proposed solution; the responsible agency; and the event by which the issue is to be resolved. The records are shown in a sequence which sorts the records first by the TYPECODE (Operation O=1, Maintenance M=2, Support S=3), then sorts them within each type code class by the CRITICALITY SCORE (CRITSCR: Essential=E, High=H, Medium=M, Low=L). Issues in the operator domain will be shown first, followed by those in the maintenance domain, and then those in the support domain. This listing is arranged in the same sequence as the immediately preceding listing.

20t ( = ) MA (N) = 2 SUP = 3	ALLEN DERIVED 1550E STATEMENT	(LISTERN.PRG) IN CRITICALITY SCORE SEQUENCE ATTAIN MANPRINT DOWAIN IMPACT PROPE	N MANPSINI DOMAIN PREPOSED SOLUTION	KESPONS;5_2 WHEN AGENCY RESOL	WHEN RESOLVED	3221 3000
n	CAN A SINGLE PILOT OPERATE THE LHX IN THE GIVEN OPERATIONAL MODE SUMMARY AND MISSION PROFILES?	. CAN A SINGLE PILOT OPERATE THE LHX BECAUSE OF ANTICIPATED HIGH USE OF INDIVIDUALIZED INSTRUCTION PW OT 11 IN THE GIVEN OPERATE THE LHX BECAUSE OF ANTICIPATED HIGH OF INDIVIDUALIZED INSTRUCTION PW OT 11 IN THE GIVEN OPERATIONAL WOLE COMPLEXITY OF LHX, TRAINING TIME WILESS CONVENTIONAL METHODS.  MODERN HIGH TECH TRAINING METHODS  ARE EMPLOYED	USE OF INDIVIDUALIZED INSTRUCTION //SIMULATION COULD PROVIDE PILOTS MORE 'QUALITY TIME' THAN BY USING CONVENTIONAL METHODS.	PM 07 11		21010
	CAN A PILOT SUCCESSFULLY ENGAGE OTHER HELICOPTERS IN AIR TO AIR COMBAT WHILE FLYING THE A/C?	THE DEMANDS OF FLYING MAY INTERFERE MITH ABILITY TO ACQUIRE ENEMY A/C DURING AIR TO AIR COMBAT CAUSING EITHER LOSS OF A/C BY FIRE, OR BY LOSS OF COMIROL	(UNKNOWN)	P#/1KADOC 01 11	Ξ	5. 6. 8.
	CAN AN EFFECTIVE AND ACCEPTABLE HELMET MOUNTED DISPLAY BE DEVELOPED FOR LHX?	INADEQUATE HMD MILL DEGRADE PILOT PERFORMANCE AND HINDER MISSION PERFORMANCE	MORK BOTH TECHNOLOGY AND HUMAN FACTORS AREAS TO PROVIDE BEST HMD FOR LHX, APPROPRIATE TRAINING	PM MS	2	6,922
	DESIGN OF LHX NEEDS TO ASSURE THAT ALL EMERGENCY PROCEDURES CAN BE PERFORMED BY A SINGLE PILOT.	OCCUPANT AND AIRCRAFT SURVIVABILITY DEPENDS UPON THE CAPABILITY TO SUCCESFULLY PERFORM EMERGENCY PRO- CEDIARES.	ASSESS LHX EMERGEMCY PROCEDURES AND ESTABLISH APPROPRIATE DESIGN REQUIREMENTS	18d #d	PRIOR TO FSD	01340

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PERFORM AMALYSES, SIMULATION
AND OPERATIONAL EVALUATION TO
ASSURE THAT THE SYSTEM DESIGN
PROVIDES SUFFICIENT FLEXIBILITY
FOR MISSION SUCCESS.

IF PART OF THE MISSION EQUIPMENT CAPABILITY IS DISABLED, THE PILOT MAY BE UMABLE TO COMPLETE THE MISSION AND/OR RETURN HOME.

DOES THE SINGLE CREW MEMBER
DESIGN ALLOW THE PILOT THE
FLEKIBILLITY TO REACT TO WISSIGN
CHANGES, DEGRADED EQUIPMENT
MODES, AND EFFECTIVELY PERFORM
THE MISSION?

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1850L CODE	273.0	01042	01042
WHEN RESOLVED	11	11	11
RESPONSIBLE AGENCY	Σ.	<b>.</b>	₹.
CO WEWD VISIDS  (THIN MANDRINE BOMAIN PROBOSED SOLUTION	OBESTHE STRUCTE CREW WERBER IF PART OF THE MISSION PERFORM ANALYSES, STWULATION PM 01 11 0°C42  DESIGN ALLOW THE BERN TO THE MISSION AND OPERATIONAL EVALUATION TO AND OPERATIONAL EVALUATION TO ASSURE THAT THE SYSTEM DESIGN CHANCES, DEGRADED EQUIPMENT AND/OR RETURN HOME FOR MISSION SUCCESS.	PERFORM ANALYSES, SIMULATION AND OPERATIONAL EVALUATION TO ASSURE "ALL THE SYSTEM CESTON PROVIDES SUFFICIENT F.EXIBILITY FOR MISSION SCORESS.	PERFORM ANALYSES, SIMULATION AND OPERATIONAL EVALUATION TO ASSUME THAT THE SYSTEM DESIGN PROVIDES SUFFICIENT FLEXIBILITY FOR MISSION SUCCESS.
LEN 15SSES DATA BROCE TOTTAD OF MEMORYSEDS (LOCKEN PRO) IN CRITICALITY SCOR, SEQUENCE WITHIN MANDRINI DOMAIN PROQUE	IF PART OF THE MISSION EQUIPMENT CARBILITY IS DISABLED, THE PILOT MAY BE UMABLE TO COMPLETE THE MISS. ION AND/OR RETURN HOME	IF PART OF THE MISSION EQUIPMENT CARABILITY IS 0.1SABLED. THE PILOT MAY BE UNAB.E TO COMPLETE THE MISSION AND/OR RETURN HONE.	IF + ART OF THE MISSION EQUIPMENT CAPABILITY IS DISABLED, THE PILOT MAY BE UMA-LE TO COMPLETE THE MISSION AND CR RETURN HOME.
ALLEN DERINGS 1SSUE STATEMENT	DOES THE SINGLE CREM MEMBER DESIGN ALLOW THE PILOT THE FLEXIBILITY TO REACT TO MISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	CUES THE SINCE CREM MEYBER DESIGN ALLOW THE PIDT THE FEXIBLETY TO GRACE TO WISSION CHANGES, DEGRADED EQUIPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	DOES THE SINGLE CREM MEMBER DESIGN ALLOW THE PILOT TPE FLEXIBILITY TO REACT TO MISSIGN CHANGES, DEGRADED EQUIPMENT MODES, AND EFECTIVELY PERFORM THE MISSION?
PAUE COMAIN VOIM ET MAINTEZ SKOT ES	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		

ALLEN DERIVEE !SSUE STATEMENT	IMPACI	IN CRITICALITY SCORE SEQUENCE MITHIN MANNEIN DOMAIN IMPACT	KESPUNSIBLE AGENCY	HHEN RESOLVED	3000 3000
DOES THE STACLE CREW MEMBER DESIGNA ALLOW THE PLOT THE FLEXIBLILTY TO REACT TO MISSION CHANGES, DEGRADED COULPMENT MODES, AND EFFECTIVELY PERFORM THE MISSION?	1 DOES THE SINGLE CREW MEMBER IF FART OF THE MISSION PERFORM ANALYSES, SINULATION PM 01 11 01042 DESIGN ALLOW THE PLOT THE EQUIPMENT CAPABILLY 1 S AND OPERATIONAL EVALUATION TO FLEXIBLY 1 S STEW DESIGN OF SIGNAL ON THE SYSTEM DESIGN OF SIGNAL ON AND SIGN	PERFORM AMALYSES, SIMULATION AND OPERATIONAL EVALUATION TO ASSURE THAT THE SYSTEM DESIGN PROVIDES SUFFICIENT FLEXIBILITY FOR MISSION SUCCESS.	E C C C C C C C C C C C C C C C C C C C	11 10	0.1042
CAN THE TARGET ACQUISITION PROCESS BE SUCCESSIOL.Y AUTOMATED TO ASSURE EFECTIVE SINGLE CREW MEMBER OPERATIONS?	ACC. MIE AMO RAPIO ACQUISITION OF IARNSEIS IS CRITICAL TO OPERATIONAL EFFECTIVENESS.	PRIOR TO FINAL CREW CJMPLEMENT DECISION, EVALUATE THE TECH- NOLOGIES THROUGH SIMULATION AND OPERATIONAL ASSESSMENTS.	ă.	550	9.043
CAN TECHNOLOGY ACCOMPLISH THE AUTOMATIC FLIGHT CONTROL WHICH IS CRITICAL TO SINGLE CREW MEMBER OPERATION?	MORKLOAD MAY INCREASE TO THE POLNT MHERE THE AVIATOR IS UMABLE TO FLY AND FIGHT SIMULTANEOUSLY.	DETERMINE ACTUAL CAPABILITIES OF PROSSOE P. FLIGHT CONTROL AUTOMA.13N AND EVALUATE THE CAPABILITY TO ACHTEVE SINGLE CREA	<u>¥</u>	FSD	01045

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MITTER WINDOWS NICH TO A POST CONTO CONTO THE TOWN TO LAKER BADE 15TING OF MEMO FIELDS (LISTERN PRU)

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01046 01647 6,000,000 S 53 FSO KESPONS: B.E AGENCY ā ₹ æ THAT ADDRESSES THE UNIQUE ASPECT OF CREM STATION EQUIPMENT AND PROTECTIVE DEVICES. AND EVALUATIONS TO ASSESS CAPABILITIES. AND EVALUATIONS TO ASSESS CAPABILITIES. PERFORM CREMSTATION LIGHTING ANALYSIS INFORMATION PROCESSING TECHNOLOGIES. INFORMATION PROCESSING TECHNOLOGIES REVISE HE DESIGN STANDARDS DEVELUP REVISE HF DESIGN STANDARDS. DEVELOP ACCELERATE DEVELOPMENT OF CRITICAL ACCELERATE DEVELOPMENT OF CRITICAL CONDUCT ANALYSIS, SIMULATION CONDUCT ANALYSIS, SIMULATION MOTION SOLUTION EFFECTIVE TRAINING EFFECTIVE TRAINING. LIGHTING HAVE A CRITICAL IMPACT ON THE ALRCREW'S ABILITY TO ACCOMPLISM THE COMMAT MISSION. MEMBER LHX MISSION ACCOMPLISHMENT AND SURVIVABILITY WILL BE SREATLY MEMLIR LHX MISSION ACCOMPLISHMENT AND SURVIVABILITY WILL BE GREATLY CREWSTATION, MAINTENANCE AND FARD WITH AUTOMATED SYSTEMS IS NOT WITH AUTOMATED SYSTEMS IS NOT FILLY DEVELOPED, SINGLE CREW FULLY DEVELOPED, SINGLE CREW IF MAN-MACHINE INTEGRATION IF MAN-MACHINE INTEGRATION [MPAC] REDUCED REDUCED OPERATION HAS NOT BEEN CUMPLETELY ASSESSED HF DESIGN STANDARDS DO OPERATION HAS NOT BEEN COMPLETELY ASSESSED. HF DESIGN STANDARDS DO ACCOMMODATES SINGLE CREW MEMBER ACCOMMODATES SINGLE CREW MEMBER AN INTEGRATED APPROACH TO OR M ISSUE STATEMEN? NOT FULLY ADDRESS ISSUES AND NOT FULLY ADDRESS ISSUES AND TRADE-OFFS IN AUTOMATION AND LIGHTING FOR MAINTENANCE AND TRADE-OFFS IN AUTOMATION AND AND HOW SPECIFIC AUTOMATION AND HOM SPECIFIC AUTOMATION ALLEN UTRINES WHA! SYSTEMS ARE AUTOMATED WHAT SYSTEMS ARE AUTOMATED STATION LIGHTING IS NEEDED COGNITIVE OVERLOAD COGNITIVE OVER UAC MAINTE? SUPT =3 7. E. S. J. C.

01048 FSD Ξ 꾶 AVIATOR FLYING THE LHX USING A CONCURRENTLY CONTROLLING OTHER EVALUATE THE EFFECTIVENESS OF 'SIDE-ARM-CONTROLLER' WHILE AND MISSION ACCOMPLISHMENT CEPENDS EFFECTIVE PILOT PERFORMANCE UPON MORKLOAD REDUCTION AIRCRAFT WITH A "SIDE-ARM-CONTROLLER" AND CONTROLLING OTHEP FUNCTIONS AT MORKLOAD RELATED TO FLYING THE THE HUMAN INTERACTION AND

AIRCRAFT FUNCTIONS.

INCLUDE MAINTENANCE AND FARP ACTIVITIES TO INSURE A FILLY INTEGRATED SYSTEM FOR LHX.

WITHOUT THIS CAPABILITY, MISSION COMPLETION WILL BE SEVERELY DEGRADED AT MIGHT AND IN ADVERSE WEATHER.

CONDITIONS, WHICH REQUIRES A MIDE

AT NIGHT AND IN ADVERSE WEATHER

THE SYSTEM FOR NAVIGATING NOF

SENSITIVITY AND RESOLUTION, IS A

HIGH RISK DEVELOPMENT

FIELD OF VIEW WITH SUITABLE

THE SAME TIME HAS NOT BEEN FULLY

DEVELOPMENT OF REQUIRED SENSOR AND DISPLAY TECHNOLOGIES. ASSURANCE OF AVAILABLITY AND EFFECTIVENESS ACCELERATE THE HIGH RISK

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SHOULD BE ESTABLISHED PRIOR TO FSD.

FARP HAS NOT BEEN FULLY EVALLATED

				:SSUE	CODE	01049
				WHEN	RESOLVED	FSD
				RESPONSIBLE	AGENCY	<b>X</b>
	المنهرة والمائنة		IN CRITICALITY SCURE SEQUENCE MITHIN MANFAIN! BOMA!		PROPOSED SOLUTION	ITY, MISSION ACCELERATE THE HIGH RISK PW FSD 01049 EVERELY DEGRADED 01SPLAY TECHNOLOGIES. ASSURANCE RSE WEATHER 05 AVAILABLITY AND EFFECTIVENESS SHOULD BE ESTABLISHED PRIOR TO FSO
	HA ISSUES DATA BASE ISTING OF WINE SIELES	(1131ERN PRG)			IMPACT	WITHOUT THIS CAPABLLITY, MISSION COMPLETION WILL BE SEVERELY DEGRADED AT NIGHT AND IN ADVERSE WEATHER
w^				ALLEN DERIVES	ISSUE STATEMENT	I HE SYSTEM FOR MAVIGATING NOE MITHOUT THIS CAPABIL  AT NIGHT AND IN ADVERSE MEN'4FR COMPLETION WILL BE SCHOOLITONS, MICH REQUIRES A MIDE  FIELD OF VIEW WITH SQUINGES A MIDE  FIELD OF VIEW WITH SQUINGES  SENSITIVITY AND RESOLUTION, IS A  HIGH RISN DEVELOPMENT
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01055	<b>9</b> 5010	01609	01009
FSD	<u>3</u> .	11	01 11
X.	ž	· &	₩.
ENSURE THAT DISPLAY DESIGN PARAMETERS ARE WITHIN RECOGNIZED LIMITS. CONDUCT RESEARCH TO DETERMINE THE FIELD OF VIEW REQUIRED FOR HELICOPTER OPERATIONS.	ANTHROPOMETRIC REQUIREMENTS ARE ESTABLISHED IN 1ST DRAFT RFP	(UNKAOHN)	(UNKNOWN)
IMPROPER INFORMATION DISPLAY AND INADEQUATE FIELD OF VIEW CAN DEGRADE PILOT PERFORMANCE	ANTHROPOMETRIC REQUIREMENTS HAVE A SIGNIFICANT EFFECT ON CONTROLS AND OTSPCAYS, SEATING ADJUSTMENTS AND HELMET SIZING.	COGNITIVE OVERLOAD. IF HUMAN FATORS ARE NOT ADDRESSED IN THE FORM OF DESIGN CRITERIA, THE EFECTIVENESS OF THE SYSTEM MAY SUFFER.	COGNITIVE OVERLOAD. IF HUMAN FACTORS ARE NOT AODRESSED IN THE FORM OF DESIGN CRITERIA, THE EFECTIVENESS OF THE SYSTEM MAY SUFFER.
VISUAL DISPLAY PARAMETERS MUST FALL MITHIN ACCEPTABLE OPERATIONAL LIMITS	ANTHROPOMETRIC REQUIREMENTS HAVE  VOT BEEN ESTABLISHED FOR THE LHW.	HOW SUCCESSFULLY DOES THE CURRENT LHX DESIGN DEAL WITH HUMAN FACTORS ISSUES IN CCGNITIVE OVERLOAD AND PILOT FATIGUE DURING COMBAT OPERATIONS, CONTINUOUS OPERATION, AND NBC OPERATIONS?	HOW SUCCESSFULLY DOES THE CURRENT LHX DESIGN DEAL WITH HUMAN FACTORS ISSUES IN COGNITIVE OVERLOAD AND PILOT FATIGNE DYRIG COMBAT OPERATIONS; CONTINUOUS OPERATION, AND NEC OPERATIONS?

5 (55.E3 (41. ) 155.E3 (41. ) 16.E3 (41. ) 17.E4 (11. ) 5.OKE	I MPACT	IS CONTRACTOR DELIVERED TRAINING POTENTIAL IMPACT ON TRAINING LIMITED TO PILOT TRAINING? STATEMENT IN ROC IS NOT CLEAR	CAN TRAINING INCREASE THE SCAT APPROPRIATE TRAINING CAN IMPROVE PILOT'S PERFORM-UNDER HIGH TASK LOADING?  CONDITIONS	CAN LAX FLIGHT HELMET WITH HWD SIGHTING EXCESSIVE HELMET WEIGHT DEGRADES SYSTEM, AND POSSIBLE NBC, LASER, AND FLASH CREW AND MISSION PERFORMANCE AND BLINDESS PROTECTIVE DEVICES MEET WEIGHT POSES POTENTIAL HEALTH HAZARD. REQUIREMENTS	FATIGUE, STRESS AND ANXIETY MAY DEGRADE SINGLE CREW MEMBER PER- GREATER IMPACT ON PERFORMANCE FORMANCE ESPECIALLY IN DEGRADED WITHOUT A 'BUDDY' PRESENT, MODES OF OPERATION.	FATIGUE, STRESS AND ANXIETY MAY FATIGUE/STRESS/ANXIETY HAVE DEGRADE SINGLE CREW MEMBER PER- GREATER IMPACT ON PERFORMANCE
THE SECTION OF MEMO FIELDS (LISTING OF MEMO FIELDS)  (LISTERN PROT)  (RETITEMENT SCONE SEQUENCE MITHIN MANARINI DOMAIN	PROPOSED SOLUTION	TRAINING CONTRACTOR DELIVERED TRAINING PM/TRADOC TOA AP U VOL IX, TNG 01017 IS ADDRESSED IN 1ST ORACT REP AND IS NOT LIMITED TO PILOT TRAINING.	(UNKNOHA)	DES DESIGN LHX HELMET SYSTEM TO MEET 3-95 POUND CRITERIA WITH PROPER CENTER OF GRAVITY AND BALLISTIC AND EYE PROTECTION TO MEET ANS! 297 : 251 ERIA	INTEGRATED, AUTOMATED COCKPIT DESIGN WORKLOAD EVALUATIONS, APPROPRIATE TRAINING	INTEGRATED, AUTUMATED COCKPLT DESIGN WORKLOAD EVALUATIONS.
	RESPONSTBLE AGENCY	PM/TRAD	TRABOC	₹.	USAARL	USAARL
	WHEN RESOLVED	PM/TRADOC TOA AP U VOL IX, TMG 01017	:: '5	FSO	01 11	11 10
	155JE 2005	. IMG 01017	91019	01023	01024	01024

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ALLEN DERIVED 1SSUE STATEMENT	LHX 1553ES DATA BASE LISTING OF MEMO FIELDS (LISTEMN PRG) IN CRITICALITY SCORE SEQUENCE WITHIN MANAPRINT DOWALN IMPACT	OF MEMO FIELDS IN MANPRINT DOMAIN PROPOSED SOLUTION	RESPONSIBLE AGENCY	MHEN RESOLVED	13SUE CODE
NOC AND COLD MEATHER PROTECTIVE CLOTHING CAN HAVE AN ADVERSE IMPACT ON SOLDIER PERFORMANCE	SCAND COLD MEATHER PROTECTIVE POTENTIAL REDUCTION IN SOLDIER ASSURE THAT THE LHX DESIGN IS COMPATIBLE WITH PROTECTIVE COMPATIBLE WITH PROTECTIVE COMPATIBLE WITH PROTECTIVE CLOTHING CAN HAVE AN ADVERSE CLOTHING PLACE HIGH PRIORITY ON NBC/COLD MEATHER EQUIPMENT DEVELOPMENT.	ASSURE THAT THE LHX DESIGN IS COMPATBLE WITH PROTECTIVE CLOTHING PLACE HIGH PRIORITY ON NBC/COLD WEATHER EQUIPMENT DEVELOPMENT.	E.	11 10	01028
LASERS AND IR RADIATIOM CAN PRODUCE VISUAL DAWAGE DURING COMBAT AND TRAINING. RF AND MICROMAVE EXPOSURES ARE POTENTIAL HEALTH HAZARDS	POTENTIAL AIR AND GROUND CREN CASUALTIES AND DEGRADED MISSION PERFORMANCE.	EQUIPMENT SHOULD COMPLY WITH MIL-STD 1425, AR40-46 AND AR40-583. LASERS SHOULD HAVE A SAFE WOBE FOR USE DURING TRAINING. AIR AND GROUND CREN TRAINING IN SAFE OPERATION AND MAINTENANCE.	ž.	E	01031
MHAT ARE THE TRAINING REQUIREMENTS FOR THE SECOND CREW MEMBER IN THE UTILITY AIRCRAFT? WHAT ARE THE CREW STATION DESIGN CRITERIA?	15SUE 1MPACTS ON CREW STATION DESIGN, ON PERSONNEL AND TRAINING, UNIT MANNING AND ULTIMATELY, ON MISSION PERFORMANCE	OPTIMUM DESIGN OF CREW STATION, DEFINITION OF JOB AND PERSONNEL QUALLFICATION, AND DEVELOPMENT OF APPROPRIATE TRAINING.	1RADOC -	PRIOR TO 07 ;1	01032
WHAT ARE THE CREW STATION DESIGN CRITERIA FOR THE LHK-UTILITY?	ISSUE IMPACTS ON CREM STATION DESIGN, ON PERSONNEL AND TRAINING, UNIT MANNING AND ULITMATELY, ON MISSION PERFORMANCE	OPTIMUM DESIGN OF CREW STATION DEFINITION OF JOB AND PERSONNEL QUALIFICATION, AND DEVELOPMENT OF APPROPRIATE TRAINING	ž	PRIOR TO 07 11	01064
CLEAR SPEECH COMMUNICATION AND AUDIO CUES ARE CRITICAL FOR SINGLE PILOT OPERATIONS. IMPROVED SPEECH INTELLIGIBILITY OVER CURRENT ATRCRAFT IS NECESSARY.	LACK OF IMPROVED COMMUNICATIONS CAN INCREASE OPERATOR WORKLOAD AND REDUCE COMBAT EFFECTIVENESS	DEVELOP IMPROVED COMMUNICATIONS FOR LHX TO COINCIDE MITH LHX FSD	¥	FSD	01033

	PAGE DOMAIN OPER =1	~	LAX ISSUES DATA BASE LISTING 3F MEMO FIELDS (LISTERN PRS) IN CRITICALITY SCORE SEQUENCE MITHIN MANPRINI DOMAIN	EWO FISIDS ANPRINT DOMAIN	RESPONSIBLE	MHEN	15SUE	
	SUPT =3		ALEN DENVE 1.55.E STATEMENT AGENCY RESOLVED	PROPOSED SOLUTION	AGENCY	RESOLVED	2000	::
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LHX CONCEPTS PRIVIDE EITHER, B 1 HELMET MOUNTED N GHT VISION SYSTEM, OR 82, NIGHT VISIN GOGGLES FOR UTILITY PILOT. B1 LEAVES SECOND CREW MEMBER WITH NO N.Y. CAPABILITY. WITH 82 CURRENT SAFETY AND OPERATION CONSTRAINTS PRECLUDE SINGLE PILOT OPERATION AT NIGHT.	REDUCED. NIGHT TIME OPERATING CAPABILITY AND/OR INCREASED HARARDS, ESPECIALLY AT NOE ALTITUDES.	ZNO DRAFT RPP SPECIFIES USE OF NIGHT VISION GOGGLES.	£	₽₽ ₽	01034	
	-	THE RESOLUTION/ACCURACY OF THE DIGITAL DATA BASE FOR THE MAP OISPLAY IS LESS THAN THAT REQUIRED FOR MOE/ADVERSE WEATHER NAVIGATION.	CRITICAL TO SINGLE PILOT OPERATIONS. REDUCTION OF PILOT NAVIGATION WORK LOAD MAY NOT REACH THE DESIRED LEVEL.	EVALUATE PROPOSED SYSTEM CAPABILITIES PRIOR TO FINAL CREM COMPLEMENT DECISION.	<b>₹</b>	FSD	01035	
Δ-72		SCAT COMBAT MISSIONS INCLUDE A REQUIREMENT FOR THE PILOT TO WAINTAIN FLIGHT CONTROL AND/OR PERFORM A TARRET DESIGNATION TASK WHILE EFFECTIVELY USING THE TURRETED GUN IN AN OFF-AXIS ENGAGEMENT. CAN THE PILOT CONCURRENTLY PERFORM THESE TASKS SUCCESSFULLY?	IF PILOT WORKLOAD IS TOO HIGH OPERATIONAL EFFECTIVENESS AND SCRUTVABILITY OF THE SCAT WILL BE REDUCED	THROUGH SIMULATION AND SURROGATE AIRCRAFT OPERATION, EVALUATE EFFECTIVENESS OF OFF-AXIS ENGAGENENT WHILE PERFORMING FLIGHT TASKS PRIOR TO FINAL CREM COMPLEMENT DECISION.	Paboc.	11 10	01036	
	-	VOICE RECOGNITION SYSTEMS ARE NECESSARY TO REDUCE PILOT MORKLOAD. TECHNOLOGY DOES NOT APPEAR SUFFICIENTLY MATURE TO MEET REQUIREMENTS UNDER COMBAT COMDITIONS.	PILOT WORKLOAD WOULD BE INCREASED TO A CRITICAL DEGREE AND MISSION PERFORMANCE WOULD BE DEGRADED.	DEVELOP VOICE RECOGNITION SYSTEM THAT WILL OPERATE EFFECTIVELY IN THE COMBAT ENVIRONMENT.	₹.	F50	01039	
		HOW CAN IN-FLIGHT DATA ENTRY SYSTEMS REDICE WORKLOAD TO LEVELS REQUIRED FOR SUCCESSFUL OPERATIONS?	AVIATOR MAY NEED TO FOCUS ATTENTION ON DATA ENTRY INSIDE THE COCKPIT MHEN HE SHOULD BE CONCENTRATING OUTSIDE.	CONDUCT ASSESSMENT/DEMON- STRATION OF THE CONCEPT TO VALIDATE MANAGENBLE PILOT WORKLOAD.	X.	P4(CR 70 FSD	970.0	

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#HEN RESOLVED	P31 PROGRAM	P31 PROGRAM	P31 PROGRAM	7% ن خه مژ <sup>7</sup> که مرژ	PRIOR TO FSD
RESPONSIBLE AGENCY	<b>₹</b>	¥€ ô.	<b>3</b> .	788000	TADOC
. "N. 1SELES TATA BASE 1.15"1MG OF PEMO FIELDS. (1.15TERL PR.) (1.5KITTALTY SLORE SEQUENCE WITHIN WANDRINT DOWAIN 1N. SKITTALTY SLORE SEQUENCE WITHIN WANDRINT DOWAIN PRODOSED SOLUTION AGENCY RESOLUTION	UMANOMIN	UNKNOHN	UNKNOMM	(Urangmi)	(UUNNOHM)
x 155, ES 1afa 9a3E 11511MG OE MEMO FIELDS (L15FERN,PRG) (L15FERN,PRG) 1v criticality slore sequence mithin mandrint Domain	ABSENCE OF EITHER OR BOTH SYSTEMS MAY RESULT IN MISSION DEGRADATION.	ABSENCE OF EITHER OR BUTH SYSTEMS MAY RESULT IN MISSION DEGRADATION	ABSENCE OF EITHER OR BOTH SYSTEMS MAY RESULT IN MISSION DEGRADATION.	A 2 PLACE A;RCRAF" PERM!"S THE INSTRUCTOR TO OVER-RIDE THE SSUDENT WHEN STUDENT GETS INTO TROUBLE. A SINGLE PLACE LAX LACKS THIS BACKUP, RESULTING IN UNRECOVERBLE ERRORS, LOSS OF A!RCRAFT AND LIFE	THE PROPOSED LHX IS A HIGHLY COMPLEX MERONES SYSTEM PLATFORM AND MAY REQUISE APITIUDES THAT ARE NOT AVAILABLE IN SUFFICIENT QUANTITY AMONG THE POPULATION THAT FEEDS THE PILOT POOC. IF THIS IS TRUE, THEN PILOTS WITH LOMER APITIUDES MOULD MAYE TO BE ACCESSED AND TRAINING TIME AND COSTS INCREASED CORRESPONDINGLY.
9 ALLEM DEKIVED ISSUE STATEMENT	1 CAN SINGLE PILOT OPERATION BE ACHIEVED ABSENC MAY RE 6. INTEGRATED COMMUNICATION, NAVIGATION, 1DENTIFICATION AVIONICS?	CAN SINGLE PILOT OPERATION BE ACHIEVED MITHOUT MILLIMETER WAVE RADAR & INTEGRATED COMMUNICATION, NAVIGATION, 1DENTIFICATION AVIONICS?	CAN SINGLE PILOT OPERATION BE ACHIEVED MITHOUT MILLIMETER WAVE RADAR 5. INTEGRATED COMMENICATION, NAVIGATION, NAVIGATION, 10ENTIFICATION AVIONICS?	HGM CAN SCAT TRAINING BE DONE AT THE UNIT LEVEL MITHOUT PROHIBITIVELY EXPENSIVE FIELDING TO UNITS OF A 2-PLACE LHX MODIFITY CATION?	CAN THE AVAILABLE OPERATORS (PILOTS) BE SUCCESSFULLY TRAINED WITHIN THE TIME, COST OF CURRENT SYSTEMS, AND WITHOUT INCREASING THE CURRENT TRAINING FACILITIES?
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"	ALLEN DERIVEC ISSUE STATEMENT STEAMY STATE AND IMPRISE MOTES INCIDE	DOMAIN  (LISTERN PRE)  ALLEA GENIVEE  ALLEA GENIVEE  INCRITICALITY SCORE SEQUENCE MITHIN MANPRINT DOMAIN  RESPONSIBLE WHEN ISSUE  SUPT =3  ISSUE STATEMENT  AGENCY RESOLVED  CODE	(LISTERN PRG) ITICALITY SCORE SEQUENCE WITHIN MANDRINT DOMAIN CT PROPOSED SOLUTION	RESPONSIBLE AGENCY	HHEN RESOLVED	15SUE CODE
<b>5</b> 4	OF THE LINEARY DEGRADE AIR AND GROUND CREWS. PERFORMANCE AND MAY POSE HEALTH HAZARDS.	DEGRADED LEEN PERFORMANCE AND/OK INJURY COULD ADVERSELY IMPACT MISSION ACCOMPLISHWENT.	DESIGN LIX TO MEET APPROPRIATE NOISE LIMITS OF MIL-STD-1204, TB-MED-501 AND MIL-STD-1474 PROVIDE AIR AND GROUND CREAS WITH HEARING ROTECTION EQUAL TO GR BETTER THAN THE SPH-4 HELMET.	E.	E	01030
	FULL CAPABILITIES AND REQUIREMENTS AND HUMAN FACTORS AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTEMANCE ACTIVITIES.	COMBAT EFFECTIVENESS OF LHX WILL BE HIGHLY DEPENDENT ON GROUND FACILITIES FOR MISSION PLANNING AND MAINTENANCE	CONDUCT AN IN DEPTH ASSESSMENT OF THE ATCREM AND MAINTAINER NEEDS AND ESTABLISH DETAILED REQUIREMENTS FOR MISSION PLANNING AND MAINTENANCE MORK STATION CAPABILITIES.	TRADOC	PRIOR TO 07 11	01037
	FULL CAPABILITIES AND REQUIREMENTS AND HUMAN FACTORS AND TRAINING CONSIDERATIONS HAVE AND TRAINING END BEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTEMANCE ACTIVITIES.	COMBAT EFFECTIVENESS OF LHX WILL BE HIGH:Y DEPENDENT ON GROUND FACILITIES FOR MISSION PLANNING AND MAINTENANCE	CONDUCT AN IN DEPTH ASSESSMENT OF THE AIRCREM AND MAINTAINER NEEDS AND ESTABLISH DETAILED REQUIREMENTS FOR MISSION PLANNING AND MAINTENANCE MORN STATION CAPABILITIES.	PADOC	PRIOR TO 0T 11	01037
	FULL CAPABILITIES AND REQUIREMENTS AND HUMAN FACTORS AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLAMMING AND MAINTENANCE ACTIVITIES.	COMBAT EFFECTIVEMESS OF LHX WILL BE HIGHLY DEPENDERT ON GROUND FACILITIES FOR MISSION PLANNING AND MAINTENANCE	CONDUCT AN IN DEPTH ASSESSMENT OF THE AFRCREW AND MAINTAINER NEEDS AND ESTABLISH DETAILED REQUIREMENTS FOR MISSION PLANNING AND MAINTENANCE WORK STATION CAPABILITIES.	TRADOC	PRIUP TO 07 11	01037

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01037 300C PRIOR TO 07 11 RESOLVED KESPONS18LE TRADOC AGENCY OF THE ATROREM AND MAINTAINER MEEDS AND ESTABLISH DETAILED REQUIREMENTS FOR MISSION PLANNING AND MAINTENANCE MORK STATION CAPABILITIES. CONDUCT AN IN DEPTH ASSESSMENT PROPOSED SOLUTION IN CRITICALITY SCORE SEQUENCE WITHIN MANPRINT DOMAIN BE HIGHLY DEPENDENT ON GROUND FACILITIES FOR MISSION PLANNING AND MAINTENANCE COMBAT EFFECTIVENESS OF LHX WILL AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER REQUIREMENTS AND HUMAN FACTORS ISSUE STATEMENT BASED MISSION PLANNING AND ALLEN DERIVED FULL CAPABILITIES AND MAINTENANCE ACTIVITIES DOMAIN OPER =1 MAINT=2 Supt =3

THE ISSUES DATA BASE LISTING OF MEMO FIELDS

= æ PRIOR TO FINAL CREW COMPLEMENT DECISION, COMPLETE THE SURVIVABILITY ANALYSIS RELATED TO CREW SIZE AS PART OF THE TRADOC COE4. MISSION ACCOMPLISHMENT AND REDUCTION OF AVIATION ASSET LOSSES DEPEND UPON HIGH SURVIVABILITY MORE OR LESS SURVIVABLE THAN A IS THE SINGLE CREMMEMBER LHX THO CREWMEMBER AIRCRAFT?

01041

CONTINUE ONGOING ANALYSIS AND RESOLVE ISSUE PRIOR TO FSD. LESS THAN ADEQUATE TRAINING AT THE UNIT LEVEL WILL REDUCE COMBAT EFFECTIVENESS. MAINTAINERS IN TERMS OF INITIAL SKILLS, REQUALIFICATION AND REQUIREMENTS FOR OPERATORS AND WHAT ARE THE UNIT TRAINING TACTICAL TRAINING?

01051

PRIOR TO FSD

TRADOC

PM/TRADOC PRIOR TO FSD COMPLETE ONGJING ANALYSES (BOIP, ICTP, CONTRACTORS) AND RESOLVE ISSUE PRIOR O FSD. MISMATCH BETWEEN AVAILABILITY OF AIRCRAFT AND AVAILABILITY OF TRAINED PERSONNEL CAN DELAY LHX DEPLOYMENT. IS THE TRAINING PLAN ADEQUATE TO SUPPORT LHX FIELDING AT THE PROJECTED RATE?

01052

	D PM START OF P31 PROGRAM 01053	FSD PM FSD RIOR TO	PM/HEL RFP
NG OF MEMO FIELDS NG) HITHIN MANDRINI DOMAIN PROPOSED SOLUTION	ASSURE THAT THE KNOWN PREPLANNED PRODUCTION IMPROVEMENTS ARE INTEGRATED INTO THE LHX SYSTEM DESIGN.	COMPLETE CNGOING ANALYSES (CTEA, CONTRACTOR) AND RESOLVE ISSUE PRIOR TO FSED.	ARTI RESULTS. ARMY/NASA CREW STATION SIMULATION STUDIES.
CHX 1SSUES DATA BASE LISTING OF MEMO FIELDS (LISTERA PAG) IN CRITICALITY SCORE SEQUÊNCE MITHIN MANPRINT DOMAIN PROPE	1 PRODUCT IMPROVEMENT MUST BE PILOT AND MAINTENANCE WORKLOAD ASSURE THAT THE ANOWN PREPLANKED PRICE FULLY INTEGRATED TO ASSURE IMPROVED MUST NOT BE INCREASED AT THE PRODUCTION IMPROVEMENTS ARE INTEGRATED SYSTEM PERFORMANCE INTO THE LHX SYSTEM DESIGN.	ADVANCES IN TRAINING TECHNOLOGY MAY REDUCE INSTRUCTOR REQUIREMENTS, IMPROVE TRAINING QUALITY CONTROL REDUCE INITIAL TRAINING TIME AND IMPROVE TRAINING IN UNITS.	IMPACT ON FEASIBILITY OF SINGLE PILOT OPERATION
13 ALLEN DERIVED :SSUE STATEMENT	PRODUCT IMPROVEMENT MUST BE FULLY INTEGRATED TO ASSURE IMPROVED SYSTEM PERFORMANCE	WILL THE LHX DESIGN TAKE ADVANTAGE OF CONPUTER ASSISTED TRAINING ENBEDDED TRAINING) TECHNOLOGIES FOR INITIAL AND UNIT TRAINING?	HOW DO PSYCHOMETOR AND COGNITIVE PERFORMANCE REQUIREMENTS FOR LHX COMPARE WITH THOSE OF AIRCRAFT

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•	PM/HEL	PM/HEL
	ARTI RESULTS. ARMY/AASA CREM STATION SIMULATION STUDIES.	ARTI RESULTS. ARMY/AASA CREN STATION SIMULATION STUDIES.
	IMPACT ON FEASIBILITY OF SINGLE PILOT OPERATION	IMPACT ON FEASIBILITY OF SINGLE PILOT OPERATION
BEING REPLACED OR OTHER AIRCRAFT IN THE DOD INVENTORY?	HOW DO PSYCHOMOTOR AND COGNITIVE PERFORMANCE REQUIREMENTS FOR LHX COMPARE WITH THOSE OF AIRCRAFT BEING REPLACED OR OTHER AIRCRAFT IN THE DOD INVENTORY?	HOM DO PSYCHOMOTOR AND COGNITIVE PERFORMANCE REQUIREMENTS FOR LHX COMPARE. WITH THOSE OF AIRCRAFT BEING "EPLACED UR OTHER AIRCRAFT IN THE JOD INVENTORY?
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RESPONSIBLE AGENCY PROPOSE ) SOLUTION IN CRITICALITY SCORE SEQUENCE MITHIN MANDRING BOMBIN SC1317 DM3M TO DW1181 BANG ATA S21823 XHL (LISTERN PRS) : MPACT ISSUE STATEMENT ALLEN DERIVED :: 3PER =1 MAINT=2 Supt =3 DOMA!A PAGE

1RADOC PILOT TRAINING. UNLESS COST EFFECTIVENESS AND TRAINING EFFECTIVENESS STUDIES ARE PERFORMED TO DETERMINE THE MEDIA AND METHODS, TRAINING OF APPROPRIATE MIX OF TRAINING PILOTS WILL SUFFER. AND TRAINING EFECTIVE MIX OF PART-TASK, FULL MISSION SIMULATOR AND OPERATIONAL AIRCRAFT IN INITIAL EMTRY LHX PILOT TRAINING? WHAT IS THE MOST COST EFFECTIVE

PUBLICATION OF CIEA 01007

RESOLVED

PRIOR TO CT :1 11 10 TRADOC USAARL THE HARDMAN ANALYSIS SHOULD PROVIDE THE INFORMATION (UNKNOMN) HEALTH HAZARDS CAN BE COSTLY TO PILOTS HEALTH AND DETRIMENTAL TO UNIT EFFECTIVENESS. HEALTH HAZAROS. UNCORRECTED I 4PLICATIONS STEMNING FROM CURRENT DEGRADATION OF PILOT PERFORMANCE OR ARE THERE LONG-TERM HEALTH (PILOT PERFORMANCE) IS THERE WHAT IS THE NUMBER OF SKILLS LHX DESIGN?

01011

01018

POTENTIAL IMPACT ON PERSONNEL SELECTION, TRAINING MOS DETERMENTION, UNIT MANNING AND FORCE STRUCTURE. AND WHAT SKILL LEVELS ARE REGUTRED FOR CURRENT LIGHT PLEET OPERATIONS? HAY SHOULD REDUCE THIS

PUBLICATION OF CIEA 01020 7RADOC (UNKNOHN) POTENTIAL FOR IMPROVED TRAINING IN LESS TIME AND LOWER COSTS HOW CAN THE USE OF NEW TECHNOLOGY SIMPLIFY AND REDUCE TRAINING REQUIRMENTS?

PUBLICATION OF CIEA 01020 TRADOC (UNKNOMN) POTENTIAL FOR IMPROVED TRAINING IN LESS TIME AND LOWER COSTS HOW CAN THE USE OF VEW TECHNOLOGY SIMPLIFY AND REDUCE TRAINING REQUIRMENTS?

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	PROLONGED EXPOSURE TO WHOLE BODY A BRATION MAY HAVE AN UNDESTRABLE IMPACT ON THE ATRCREM	TOPOLOMGED EXPOSURE TO MHOLE BODY EXCESSIVE VIRRATION LEVELS COULD DESIGN LHX WITHIN LIMITS OF MIL-STD USAARL TTO ATBRATION MAY HAVE AN UNDESTRABLE DEGRADE CREW PERFORMANCE AND 1472C, PARA 5 8.9.1.1 IMPACT ON THE ATRCREM	DESIGN LHX WITHIN LIMITS OF MIL-5TD 1472C, PARA 5.8.9.1.1	USAARL	14	01025
	CURRENT FIRE EXTINGUISHING SYSTEMS OFTEN USE HALON 1301 WHICH CAN HAVE ADVERSE HEALTH EFFECTS ON PERSONNE	HALOW 1301 COULD HAVE AN IMPACT ON PERSONNEL WIEN USED IN COMFINED SPACES SUCH AS CREW STATIONS AND PASSENGER COMPARTMENTS	EVALUATE POTENTIAL FIRE EXTINGUISHING SYSTEMS TO ALLEVIATE HEALTH HAZARDS ASSOCIATED MITH HALON 130?	Æ	E	01026
	AS THE LHX ENTERS THE INVENTORY CURRENT MAY BE REPLACED BY LHX. THE LHX TRAINING PROGRAMCYSTEMALISCRAFT SHOULD BE ESTABLISHED TO INCLUDE IERM.	DESIGNATING THE LHX AS PRIMARY TRAINER FOR ALL IERN EARLIER IN THE PROGRAM MAY DECREASE LONG TERM TRAINING COSTS.	COMPLETE ONGOING ANALYSIS (CTEA) And Resolve Issue Prior to FSED.	TRADOC .	PR10R TO FSD	01050
	MMAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF OTHER AIRCRAFT STATIONED WITH THE LHX?	WITHOUT ADEQUATE ATTENTION TO THE IMPACT OF LHX INTEGRATION INTO UNITS, UNIT EFFECTIVENESS MAY SUFFER (A)	COMTINUE AMALYSIS FROM TOTAL SYSTEM PERSPECTIVE TO ENSURE THAT UNNECESS- ARY REDUNDANCIES AND CRITICAL TRAINING VOIDS ARE AVOIDED.	TRADOC	PRIOR TO FIELDING	01057
	NBC AND COLO WEATHER PROTECTIVE CLOTHING CAN HAVE AN ADVERSE IMPACT ON SOLDIER PERFORMANCE.	POTENTIAL REDUCTION IN SOLDIER PERFORMANCE AND MISSION SUCCESS.	ASSURE THAT THE LHX DESIGN IS COMPATIBLE WITH PROTECTIVE CLOTHING. PLACE HIGH PRIORITY ON NBC/COLD WEATHER EQUIPMENT DEVELOPMENT.	¥€ č.	11 10	M1003

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	3 IO LOMAN DON	AGENCY	£	Æ	<b>g</b> '	₹	PM/TRAD
	IEMO FIELOS MARPRINT OCMAIN	RESPONSIBLE MARA 13JUL PROPOSED SOLUTION AGENCY RESOLVED CODE	ASSURE THAT THE LHX DESIGN IS COMPATIBLE WITH PROTECTIVE CLOTHING PLACE HIGH PRIORITY ON NBC/COLD WEATHER EQUIPMENT DEVELOPMENT.	EQUIPMENT SHOULD COMPLY MITH MIL-STD 1425, AR40-46 AND AR40-583. LASERS SHOULD HAVE A SAFE MODE FOR USE DURING TRAINING IN SAFE OPERATION AND MAINTENANCE.	ACCELERATE DEVELOPMENT OF CRITICAL INFORMATION PROCESSING TECHNOLOGIES. CONDUCT ANALYSIS, SIMULATION AND EVALUATIONS TO ASSESS CAPABILITIES. REVISE HF DESIGN STANDARDS. DEVELOP EFFECTIVE TRAINING.	PERFORM CREMSTATION LIGHTING AMALYS: 3 THAT ADDRESSES THE UNIQUE ASPECT OF CREM STATION EQUIPMENT AND PROTECTIVE DEVICES. INCLUDE MAINTENANCE AND FARP ACTIVITIES TO INSURE A FULLY INTEGRATED SYSTEM FOR LHX.	COMPLETE ONGOING ANALYSES (BOIP, ICTP, COMTRACTORS) AND RESOLVE ISSUE PRIOR TO FSD.
	LHX 155UES DATA BASE LISTING OF MEMO FIELDS (LISTERN PRG) (N. CRITICA, IT* SCCNE, SEGUENCE MITHIN MANPRINT DOMAIN	IMPAC1	POTENTIAL REDUCTION IN SOLDIER PERFORMANCE AND MISSION SUCCESS	POTENTIAL AIR AND GROUND CREW CASUALTIES AND DEGRADED MISSION PERFORMANCE.	IF MAN-MACHINE INTEGRATION MITH AUTOMATED SYSTENS IS NOT FULLY DEVELOPED, SINGLE CREW MEMBER LHX MISSION ACCOMPLISHMENT AND SURYIYABILITY WILL BE GREATLY REDUCED.	CREMSTATION, MAINTENANCE AND FARP LIGHTING HAVE A CRITICAL IMPACT ON THE AIRCREM'S ABILITY TO ACCOMPLISH THE COMBAT MISSION.	MISMATCH BETWEEN AVAILABILITY OF AIRCRAFT AND AVAILABILITY OF TRAINED PERSONNEL CAN GELAY LHX DEPLOYMENT.
	<b>3</b> 1	ALLEN DERIVEC 1SSUE STATEMENT	NBC AND COLD WEATHER PROTECTIVE CLOTHING CAN HAVE AN ADVERSE IMPACT ON SOLDIER PERFORMANCE	LASERS AND IR RADIATION CAN PRODUCE VISUAL DANAGE DURING CONGAT AND TRAINING RF AND MICROMAVE EXPOSURES ARE POTENTIAL HEALTH HAZAROS.	MHAT SYSTEMS ARE AUTOWATED AND HOW SPECIFIC AUTOMATION ACCOMMODATES SINGLE CREW MEMBER OPERATION HAS NOT BEEN COMPLETELY ASSESSED. HE DESIGN STANDARDS DO NOT FULLY ADDRESS ISSUES AND TRADE-OFFS IN AUTOMATION AND COGNITIVE OVERLOAD.	AN INTEGRATED APPROACH TO CREM STATION LIGHTING IS WEEDED. LIGHTING FOR MAINTÉNANCE AND FARP HAS NOT BEEN FULLY EVALUATED.	IS THE TRAINING PLAN ADEQUATE TO SUPPORT LHX FIELDING AT THE PROJECTED RATE?
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# CHX ISSUES DATA BASE LISTING OF MEMO FIELDS

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	MAEN RESOLVED	PR10R 10 FSD	PR10R TO F50	Ħ.	PRIOR TO 01 11
	RESPONSIBLE AGENCY	\$71/Md	S11/Wd	å	TRADOC
MINERAL MINERAL MARKET	MOTTUJOS 0380409c	CAN ALL UNTITUAINTENANCE FUNCTIONS POTENTIAL DESIGN TRADE-OFFS MONITOR AIRCRAFT DESIGN. PERFORM PN/ILS PRIOR TO FSD M1002  BE PERFORMED BY NO MORE HAN THREE IMPACT ON MOS DETERMINATION. TASK & SKILL ANALYSIS INCLUDE  MOS INCLUDING CREM CHIEF?  UNIT MANNING AND FORCE  STRUCTURE.	MONITOR AIRCRAFT DESIGN. PERFORM TASK & SKILL AMALYSIS. INCLUDE IN QQPRI.	DESIGN LHX TO MEET APPROPRIATE NOISE LIMITS OF MIL-STD-1294, TB-MED-25: AND MIL-SID-1474, PROVIDE AJR AND GROUND CREMS MITH HEARING PROTECTION EQUAL TO OR BETTER THAN THE SPH-4 HELMET	CONDUCT AN IN DEPTH ASSESSMENT OF THE AIRCREM AND MAINTAINER NEEDS AND ESTABLISH DETAILED REQUIREMENTS FOR MISSION PLANNING AND MAINTENANCE MORN STATION CAPABILITIES
IN CRITICA. TY SCARE SECURICE MITHIN WANGEN' DOMAIN		POTENTIAL DESIGN TRADE-OFFS IMPACT ON MOS DETERNINATION POTENTIAL IMPACT ON TRAINING UNIT MANNING AND FORCE STRUCTURE.	POTENTIAL DESIGN TRADE-OFFS JAPACT ON MOS DETERNIANTION. POTENTIAL JAPACT ON TRAINING UNIT MANNING AND FORCE STRUCTURE.	DEGRADED CREW PERFORMANCE AND/OR INJURY COULD ADVERSLY IMPACT MISSION ACCOMPLISHMENT.	COMBAT EFFECTIVENESS OF LHX WILL BE HIGHLY DEPENDENT ON GROUND FACILITIES FOR MISSION PLANNING AND MAINTENANCE.
	ALLEN DERIVED ISSUE STATEMENT	CAN ALL UNIT MAINTENANCE FUNCTIONS BE PERFORMED BY NC MORE THAN THREE MOS INCLUDING CREW CHIEF?	CAM ALL UNIT MAINTENANCE FUNCTIONS BE PERFOONED BY NO MORE THAN THREE NOS INCLUDING CREW CHIEF?	STEADY STATE AND IMPULSE NOISE LEVELS OF THE LHX MAY DEGRADE AIR AND GROUND CREMS' PERFORMANCE AND MAY POSE HEALTH HAZAROS	FULL CAPABILITIES AND REQUISEMENTS AND HUMAN FACTORS AND TRAINING CONSIDERATIONS HAVE NOT BEEN DEFINED FOR THE COMPUTER BASED MISSION PLANNING AND MAINTENANCE ACTIVITIES.
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HHEN RESOLVED	FULL CAPABILITIES AND  REQUIREMENTS AND  REQUIREMENTS AND HUMAN FACTORS  REQUIREMENTS AND HUMAN FACTORS  REQUIREMENTS AND HUMAN FACTORS  REQUIREMENTS AND HUMAN FACTORS  RECUITIES OF MISSION PLANNING AND ON HE AIGNER AND MAINTENANCE  AND STAINING COMSIDERAL AS AND HUMAN FACTOR HISSION PLANNING AND FOR MISSION PLANNING AND MAINTENANCE  BASED MISSION PLANNING AS AND HISSION PLANNING AND MAINTENANCE  MAINTENANCHE ACTIVITIES  MAINTENANCHE ACTIVITIES	AT CONTINUE ONGOING AMALYSIS AND TRADOC PRIOR TO FSO M1010 COMBAT RESOLVE ISSUE PRIOR TO FSD	140 ASSURE THAT THE UNDWN PREPLANED 2M START OF 931 PROGRAM MID12 F PRODUCTION IMPROVEMENTS ARE INTEGRATED INTO THE LINK SYSTEM DESIGN.	LUGCY MAY COMPLETE ONGOING ANALYSES (CTEA, PM FSD M1013 FY*S, COMPRACTOR) AND RESOLVE ISSUE PRIOR TO MIROL FSD
.ma 155ke5 (pa)  A.CRITCALLY	COMBAT EFECTIVENESS OF LHX MILL REQUIREMENTS AND HUMAN FACTORS BE FLOW DEPASET ON GROUND AND TRAINING COMBIDERATORS AND HUMAN FACTORS FACTITIES FOR MISSION PLANNING AND BASED MISSION PLANNING AND MAINTENANCHE ACTIVITIES  COMBAT EFECTIVENESS OF LHX MILL BE FLOW DEPASED OF THE COMPUTER MAINTENANCHE ACTIVITIES	MMAT ARE THE UNIT TRAINING AT REQUIREMENTS FOR OPERATORS AND THE UNIT LEVEL MILL REDUCE COMBAT MAINTAINERS IN TERMS OF INITIAL EFFECTIVENESS. SKILLS, REQUALIFICAT ON AND TACTICAL "RAINING"	PACONCT IMPROVEMENT PUST BE PLOOT AND MAINTENANCE MORN, DAD FOLLY INFOGRATED TO ASSUME IMPROVED MOST NOT BE INCREASES AT THE SYSTEM PERFORMANCE. EXPENSE OF MISSION PERFORMANCE.	MILL THE LHX DESIGN TAKE ADVANTAGE ADVANCES IN TRAINING TECHNOLOGY MAY OF COMPUTER ASSISTED TRAINING TECHNOLOGY MAY EMBEDDED TRAINING Y TECHNOLOGIES IMPROVE TRAINING QUALITY CONTROL
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RESPUNS,181.E	SUPT = 3 ISSUE STATEWEY RESOUVED CONDUCT EARLY ANALYSIS TO DESSION AGENCY RESOUVED CONDUCT EARLY ANALYSIS TO DESSION ADEQUATELY FAILURE TO DESSION ADERED FOR EASE OF CONDUCT EARLY ANALYSIS TO DESSION ADEQUATELY ALMERANCE UNDER ADVERSE OPER RESOUVE ISSUE CONSIDER HUMAN FACTORS IN WALM CONDITIONS AND ENVIRON- RESOURCE UNDER STATEM AND INCREASE WAINTENANCE TAXINING TIME, AND INCREASE WENTAL.  CLOTHING COMPOSITE MATERIAL REPAIR, ETC)? MRINING TIME, AND INCREASE WENTAL.  AND INCREASE WENTAL.  CLOTHING COMPOSITE WATERIAL REPAIR, ETC)? MRINING TIME, AND INCREASE WENTAL.  AND INCREASE WENTAL.  PRODUCT EARLY ANALYSIS TO DESIGN FOR EXCIT OF AN INCREASE WENTAL.  AND INCREASE WENTAL.	COMDUCT EARLY ANALYSIS TO 2M PRIOR TO FSD M:017 RESOLVE ISS.:	CONDUCT EARLY ANALYSIS TO PM PRIOR TO FSD M1017 RESOLVE ISSUE.
LAX 1830ES DATA BASE LISTING OF MEMO FIELDS (LISTERN PRG) (LISTERN PRG) IN CRITICALITY SCORE SEQUENCE ATTHIN MANMATHY DUMAIN	HPACT FAILURE TO DESIGN FOR EASE OF NAINTENANCE UNDER ADVERSE OPER- ATIONAL CONDITIONS AND ENVIRON- NENTS CAN DEGRADE SYSTEM AVAIL- ARILLITY, HORRAGE MAINTENANCE TRAINING TIME, AND INCREASE MENTAL DA TEGERY REQUIREMENTS FOR SPECIFIC MOSTS	FAILURE TO DESIGN FOR EASE OF MAISONAL CONDITIONS AND ENVIRON-MENTS CAN DEGRADE SYSTEM AVAILABILITY, INCREASE MAINTENANCE TRAINING TIME, AND INCREASE MENTAL CATEGORY REQUIREMENTS FOR SPECIFIC MOSS'S.	FAILURE TO DESIGN FOR EASE OF MAINTENANCE UNDER ADVERSE OPER-ATIONAL CONDITIONS AND ENVIRON-MEN'S CAN DEGRADE SYSTEM AVAILABILITY INCREASE MAINTENANCE TO ATTACK AND THE AND THE ADDITIONAL THE AND TH
19 ALEN BERIVET	ISSUE S'AFWENT  DOES THE LHX SYSTEM DESIGN ADEQUATELY CONSIDER HUMAN FACTORS IN WAINTENANCE (E. G. ACCESSIBILITY, PROTECTIVE CLOTHING COMPOSITE MATERIAL REPAIR, ETC.)?	DOES THE LHX SYSTEM DESIGN ADEQUATELY COMSIDER HUMAN FACTORS IN MAINTENANCE (E.G. ACCESSIBILITY, PROTECTIVE CLOTHING COMPOSITE MATERIAL REPAIR, ETC)?	DOES THE LHX SYSTEM DESIGN ADEQUATELY CONSIDER HUMAN FACTORS IN MAINTENANCE (E.G. ACCESSIBILITY, PROTECTIVE CLOTHING COMPOSITE MATERIAL REPAIR ETC)?
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CHISTEAN PROFESSOR ALEN DERIVED  NATURAL ALEN DERIVED  SOUTH SECUENCE ALEN DERIVED  RESPONSIBILE HAMEN  15SUE STATEMENT  AGENCY  RESPONSIBILE HAMEN  AGENCY  RESPONSIBILE  RESPONSIBILE  RESPONSIBILE  RESPONSED  RESPONSED	COMPLETE ONGOING ANALYSES (CTEA.ICTP, ThO LEVE, MAINTRANCE) AND RESOLVE ISSUE PRIOR TO FSD.
dig:	TWO LEVEL MAINTENANCE MAY INCREASE UNIT TRAINING BURDEN DURING PHASE-IN. ADDITIONAL LHX REQUIREMENTS MAY INCREASE SELECTED MOS TRAINING.
ALLEN DEKIVE? 1890E STATEMENT	AHAT IMPACT DOES TWO LEVEL MAINTENANCE HAVE ON INSTITUTIONAL AND UNIT LEVEL MAINTENANCE TRAINING DURING LHX "PHASE IN" PERIOD AND WHEN STEADY STATE CONDITIONS ARE REACHED?

NO M1015	#1016	8101 <b>2</b>
PRIOR TO PRODUCTION MIDIS	:1	PRIOR TO 0T 11
PM/1LS	š.	\$11-wd
COMPLETE DNGOING ANALYSES (CIEA, ICTP, IMD LEVEL MAINTENANCE) AND RESOLVE (SSUE PRIOR TO FSD.	COMPLETE ONGOING AMALYSES (ES) HARPMAM, LSA/LSRQ, TWO, LEVEL MAINTEMANCE, CONTRACTOR TRAINING ANALYSIS.)	CONTINUE ASSESSMENT BEYOND CONCEPT DEVELOPMENT UNTIL NEEDED INFORMATION IS AVAILABLE.
TWO LEVEL MATMING MASE-IN UNIT TRAINING BROSE-IN ADDITIONAL LAY REQUIREMENTS MAY INCREASE SELECTED MOS TRAINING	FATIGUE AND STRESS CAN INCREASE ERROR RATES AND TIME TO ACCOMPLISH IASKS EXCESSIVE FATIGUE AND STRESS MAY ADVERSELY AFFECT MISSION ACCOMPLISHME	MAINTENANCE TRAINING REQUIREMENTS CANNOT YET BE FIRMLY STATED.
AHAT IMPACT DOES TWO LEVEL AMJUTERANCE HAVE ON INSTITUTIONAL AMD UNIT LEVEL MAINTENANCE TRAINING DURING LHY "PHASE IN" PERIOD AND WHEN STEADY STATE CONDITIONS ARE REACHED?	WILL THE FATICUE AND STRESS FROM THE MAINTERANCE BURDEN OF SUSTAINED CONTINUOUS OPERATIONS ADVERSELY AFFECT MISSION ACCOMPLISHMENT?	ANALYSES OF MAINTENANCE TRAINING ARE COMPLICATED BY THE PROSPECT OF ALTERATIONS IN MAINTENANCE MOS'S 2-LEVEL MAINTENANCE AND HARPWARE INNOVATIONS.
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DOMAIN CPER = 1	USALOZU MS I M	. HA 13SUES CATA BASE LISTINO OF MEMO FIELDS (LISTERN PRG) IN CRITICALITY SCORE SEQUENCE MITHIN MANPRINT DOMAIN	YEMO FIELDS MANPKINI OCMAIN	3 (0.15) 11(0.539)	3.5 3.7 3.7	; ;
SUPT = 3	ISSUE STATEMENT	IMPACT	PROPOSED SOLUTION	AGENCY	RESOLVED	2000
11 11 16 17	2 THE AMOUNT OF NOM-MAINTENANCE TASKS PER INOLVIDUAL MAINTAINER MAY INCREASE AS THE MAINTENANCE POPULATION DECREASES.	UNDERESTIMATED MANPOMER REQUIREMENTS CAUSE INADEQUATE TRAINING SUPPORT STRUCTURE TO BE INTITATED AND CAN CREATE A SEVERAL YEAR LAG IN RECRUITING.	UNDERESTIMATED MANDOMER REQUIREMENTS GIVE APPROPRIATE ATTENTION TO PM-ILS OT 11 M1019 CAUSE INADEQUATE TRAINING SUPPORT NON-MAINTEMANCE TASKS IN STAFFING STRUCTURE TO BE INITIATED AND CAN FOR MAINTENANCE IN UNITS CREATE A SEVERAL YEAR LAG IN RECRUITING.	S1I-≅d	II 10	6. 6. 8. 8.
	MMAT IS THE NUMBER OF SKILLS AND MMAT SKILL LEVELS ARE REQUIRED FOR CURRENT LIGHT FLEET OPERATIONS? LHX SHOULD REDUCE THIS.	POTENTIAL IMPACT ON PERSONNEL SELECTIOM, TRAINING MOS DETER- MINATION, UNIT MANNINS AND FORCE STRUCTURE.	THE HARDMAN ANALYSIS SHOULD PROVIDE THE INFORMATION.	TRADOC	PRIOR TO 01 11	<b>₩</b>
	MHAT IS THE IMPACT OF METRIC MEASURE ON MAINTENANCNE AND MAINTENANCE TRAINING?	USE OF METRIC MEASURE COULD PROVE COSTLY AND DELAY THE REPAIR PROCESS ESPECIALLY IF LHX CONTAINS A MIX OF METRIC AND STANDARD SIZES.	CONDUCT PERFORMANCE ANALYSIS TO DETERNINE OVERALL SIGNIFICANCE OF USING METRIC MEASURE. PROVIDE APPROPRIATE TRAINING.	<b>3</b> a	:: 5	#1008
	MHAT IS THE IMPACT OF METRIC MEASURE ON MAINTENANCHE AND MAINTENANCE TRAINING?	USE OF METRIC MEASURE COULD PROVE COSTLY AND DELAY THE REPAIR PROCESS ESPECIALLY IF LHX CONTAINS A MIX OF METRIC AND STANDARD SIZES.	CCNDUCT PERFORMANCE ANALYSIS TO DETERMINE OVERALL SIGNIFICANCE OF USING METRIC MEASURE. PROVIDE APPROPRIATE TRAINING.	¥ G	07 11	8 3 0 C M
	WHAT ARE THE TRAINING REQUIREMENTS FOR PERSONNEL OF OTHER AIRCRAFT STATIONED MITH THE LHX?	MITHOUI ADEQUATE ATTENTION TO THE IMPACT OF LHX INTEGRATION INTO UNITS, UNIT EFFECTIVENESS MAY SUFFER (A).	CONTINUE ANALYSIS FROM TOTAL SYSTEM PERSPECTIVE TO ENGURE THAT UNNECESS- ARY REDUNDANCIES AND CRITICAL TRAINING VOIDS ARE AVOIDED.	TRADOC	PRIOR TO FIELDING	er Ca In

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			WHEN RESOLVED	106 CEN 07 11
			RESPONSIBLE AGENCY	00 CEN
	OF MEMO FIELDS	NIEMOG TNIRAMAWINIEM GOVEN, GERORE	PROPOSED SOLUTION	RAINING AT DESIGN LHX FUEL AND WEADONS REDUCE COMBAT PLATFORM / INTERFACE TO ACHIEVE REDUCE COMBAT PLATFORM / INTERFACE TO ACHIEVE MISSION REQUIREMENTS. CONSIDER AMMUNITION PACKAGING ENHANCE.
	UNY 1896ES DATA BASE UISTING OF MEMO FIELDS	TIM BONSHORS SECRE ALTRECTIVE NO	[Dade]	LESS THAM ADEQUATE TRAINING AT THE UN'T LEVEL WILL REDUCE COMBAT EFFECTIVENESS
8			ALLEN DERIVES ISSUE STATEMENT	REQUIRED TURN AROUND TIME IN LESS THAN ADEQUATE THE SARP 15 15 HAN ADEQUATE THE UN'T LYBEL WILL! RECEIVENESS SOLDIERS PER AIRCRAFT
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S1001	\$1002	\$1003
PRIOR TO PRODUCTION S1001	FSD	PR10R 10 FSD
TRADOC	<b>2</b>	TRADOC
INCLUDE IN HARDMAN ANALYSIS. JINCLUDE IN QORRI. LOOK FOR OFF-SETTING REDUCTIONS AS LHX DEVELOPMENT PROGRESSES.	PERFORM CREMSTATION LIGHTING ANALYSIS THAT ADDRESSES THE UNIQUE ASPECT OF CREM STATION EQUIPMENT AND PROTECTIVE DEVICES. INCLUDE MAINTENANCE AND FARP ACTIVITIES TO INSURE A FULLY INTEGRATED SYSTEM FOR LHX.	CONTINUE ONGOING ANALYSIS AND RESOLVE ISSUE PRIOR TO FSD.
POTENTIAL IMPACT ON FORCE STRUCTURE	CREMSTATION, MAINTENANCE AND FARP LIGHTING HAVE A CRITICAL IMPACT ON THE AIRCREM'S ABILITY TO ACCOMPLISH THE COMBAT MISSION.	LESS THAN ADEQUATE TRAINING AT THE UNIT LEVEL WILL REDUCE COMBAT EFFECTIVENESS.
MILL THE LARGER LHX FLEET RESULT IN AN INCREASE IN THE TOTAL NUMBER OF PERSONNEL REQUIRE') TO OPERATE AND ADMIN- ISTER THE COMPLEX LHX TRAINING DEVICES?	AN INTEGRATED APPROACH TO CREM STATION LIGHTING IS WZEDED LIGHTING "GR" MI, WTENANCE AND FARP HAS NOT BEEN FULLY EVALUATED.	WHAT ARE THE UNIT TRAINING REQUIREMENTS FOR OPERATORS AND MAINTAINERS IN TERMS OF INITIAL SKILLS, REQUALIFICATION AND TACTICAL TRAINING?
<b>"</b>	~	m

\$1004

PM/TRADOC PRIOR TO FSD

COMPLETE ONGOING ANALYSES (801P, ICTP, CONTRACTORS) AND RESOLVE ISSUE PRIOR TO FSD.

MISMATCH BETMEEN AVALLABILITY OF AIRCRAFT AND AVAILABIITY OF TRAINED PERSONNEL CAN DELAY IHX DEPLOYMENT.

IS THE TRAINING PLAN ADEQUATE TO SUPPORT LHX FIELDING AT THE PROJECTED RATE?

Sign	3000	\$1006	\$1007	G S1008
	RESOLVED	11 10	RFP	PRIOR TO FIELDING
3.181.2.NOGS.28	AONE9¢	R.	<u>s</u>	TRADOC
NEMO FIELDS NANPRINT DOMAIN	IMPAGT SGLUTION SGEYCY RESOLVED CODE	COMPLETE ONGOING ANALYSES (EG HARDMAN, LSA/LSA, TWO LEVEL MAINTENANCE, CONTRACTOR TRAINING ANALYSIS ) AND RESOLVE ISSUE PRIOR TO FSO.	2ND DRAFT RFP PROVIDES OXYGEN FOR PATIENTS.	CONTINUE ANALYSIS FROM TOTAL SYSTEM PERSPECTIVE TO ENSURE THAT UNNECESS- ARY REDUNDANCIES AND CRITICAL TRAINING VOIDS ARE AVOIDED.
LHX ISSUES DATA BASE LISTING OF MEMU FIELDS (LISTERN PRS) IN CRITICALITY SCORE SEQUENCE WITHIN MANPRINT DOMAIN	11	FATIGEROR TASKS MAY A ACCOM	ENHANCED ENROUTE PATIENT CARE WILL RESULT IN A MORE STABLE PATIENT DELIVERED TO A MEDICAL TREATMENT FACILITY AND WILL SPEED RETURN TO DUTY.	MITHOUT ADEQUATE ATTENTION TO THE IMPACT OF LHX INTEGRATION INTO UNITS, UNIT EFFECTIVENESS MAY SUFFER (A)
23 ALLEN DERIVED	13 13 14 14 15 11 11 11 11 11 11 11 11 11 11 11 11	MILL THE FATIGUE AND STRESS FROM THE MAINTENANCE BURGEN SUSTAINED CONTINUOUS OPERATI ADVERSELY AFFECT MISSION ACCOMPLISHMENT?	ODTIMAL PATTENT CARE MOT PROVIDED. NO OXYGEM, COOLING OR OVER PRESSURE PROVIDED FOR PATTENTS	MHAT ARE THE TRAINING REQUIREMENTS OF OTHER AIRCRAFT (AVIATORS, CREMS, MAINTENANCE) STATIONED WITH THE LHX?
02.769787 3.31.24 PAGE: DOMAIN 20ER: 17	Supt =3	<b></b>	m	m

Requirements Documents Data Base Listings by

Identification Code (IDNO) Sequence

REQUIREMENTS DOCUMENTS DATA BASE (REQDOK FRM)

7456 No

10N0 2222	IONO 117LE OF DOCUMENT		DOCUMENT LOCATION (ARL/ALLEA)	DOCUMENT LOCATION AUTHOR (ARI/ALLEN) ORIGINATING ORGANIZATION	DATE SEC. DOC.  OF SEC. DOC.  DOCUMENT STATUS CLASS TYPE MEDIA	SEC. IUS CLASS	00C.	ME01/
1001	RIODI OPERATIONAL AND ORGANIZATIONAL (OGO) PLAN FOR THE LIGHT HELICOPTER FAMILY (LHX)	UNKNOMN	045 ARI LHX FILE FOLDER (ALLEN)	USAAVNC-DCD-LHX TSM	03/18/82 0	=	<b>±</b>	۵.
R1002	RIOD2 LETTER OF AGREEMENT (LOA) FOR THE LIGHT HELICOPTER FAMILY (LHX) FOR TRADOC ACN 69396: CARDS REFERENCE: BOSIAA	CARL H MCMAIR, JR, MAJOR GENERAL, GS, DEPUTY CHIEF OF STAFF FOR COMBAT DEVELOPMENTS AND ROBERT L. MOORE, LIEUTENANT GENERAL, USA DEPUTY COMMANDING GENERAL FOR RESEARCH, DEVELOPMENT AND ACQUISITION	O45 ARI LHX FILE FOLDER (ALLEN)	HEADQUARTERS TRADOC ATCD FT. MONROE, VA	03/05/85 F	<b>=</b>	£	a.
R 1003	RIOOJ LIGHT HELICOPIER FAMILY (LHX) DRAFT REGUIREO OPERATIONAL CAPABILLIY (ROC) ACN: 6936	UNKNOMN	019 ARI LHX FILE FOLDER (ALLEN)	HEADQUARTERS, USA AVIATION CENTER, FORT RUCKER, AL	11/30/85 0	9/18	*	۵.
R1004	R1004 DRAFT REQUEST FOR PROPOSAL (RFP)DAAJOS-85-R-A004, LHX AIRCRAFT SYSTEM	ANCPH-LHX-T, MR. MAYNE MORTON	012 ARI LHX FILE FOLDER (ALLEN)	HEAUQUARTERS AVIATION SYSTEMS COMMAND, 4300 GOODFELLOW BLVD. S7. LOVIS, NO AMSAV-PS:	12/30/85 0	11/5	<b>x</b>	۵
R1005	RIDDS TENTATIVE BASIS OF ISSUE PLANS (TBOIP) AND TENTATIVE QUALITATIVE AND QUANTITATIVE PERSONNEL REQUIREMENTS INFORMATION (TQQPRI) FOR THE HELICOPTER, SCOUT/ATTACK (LHX), LIN 233524, BOIP 85-0333-T AND THE HELICOPTER UTILITY (LHX), LIN 233556, BOIP 85-0334	MR. DISTEFANO	003 ARI LHX FILE FOLDER (ALLEN)	HEADQUARTERS TRAINING AND DOCTRINE COMMAND	12/06/85 0	٥,	<b>5</b>	۵
R1006	R1006 TRAIMING DEVICE REQUIREMENTS (TOR)				02/28/86			
R1007	RIDDT GUIDDANCE LETTER, LIGHT HELICOPTER FAMILY (LHX) MILESTONE 1/11, DECISION REVIEW BY ASARC	HELICOPTER FAMILY ROB ROY MCGREGOR, DIRECTOR, DECISION REVIEM BY SYSTEMS REVIEM AND ANALYSIS OFFICE	030 ARI LHX FILE FOLDER (ALLEN)	US ARMY OFFICE OF DEPUTY CHIEF 11/21/85 OF STAFF FOR RESEARCH DEVELOPMENT AND ACQUISION, WASHINGTON, D.C. (DAMA-RA)	: 11/21/85 F	<b>3</b> 3	7	a.
R1010	RIOIO LIGHT HELICOPTER SYSTEM FULL SCALE DEVELEMENT REQUEST FOR PROPOSAL, DANIO9-86-A0004,LHX	AMCPM-LHX	OI2 ARI FILE FOLDER (ALLEN)	HO, AVIATION SYSTEMS CMD, 4300 11/24/86 20 GOODFELLON BLVD. ST LOUIS MO. AMCPM-LHX	11/24/86 20	⇒	×	a

Analysis Documents Data Base Listings by
Identification Code (IDNO) Sequence

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DWO TITLE OF DOC	DOCUMENT	At THÜK	DUCUMENT LOCATION (ARI/A-LEN)	CRIGINATING ORGANIZATION	DATE OF SEC. DOC OUCUMENT MEDIA STATUS CLASS TYPE	1A STATUS	SEC. US CLASS	DOC SS TYPE	0
A1381 LHX-PROFILES OF COEA	DEA CONFIGURATION	UNKNOMN	002 ARI LHX FILE FOLDER (ALLEN)	JNKNOMN	11/08/85 P	ఆ	5	+-	
A1002 LIGHT HELICOPTER FAMILY TRADE-OFF ANALYSIS APPENDIX N VOLUME IV ACH	LIGHT HELICOPTER FAMILY TRADE-OFF ANALYSIS APPENDIX N VOLUME IV ACN.69396	UHKNOMN	027 ARI LHX FILE FOLDER (ALLEN)	TRADOC-AMC	05/15/85 P	0	3	œ	
A1003 LIGHT HELICOPTER FAMILY TRADE-OFF ANALYSIS APPENDIX R VOLUME VII ACN: 69396 Humam Factors/Man Machine Interface	AMILY TRADE-OFF R VOLUME VII ACN: DRS/MAN MACHINE	HICKMAN, ARMSIROMG, CLEEK	028A 6028B ARI LHX FILE FOLDER TRADOC-AMC (ALLEN)	4 TRADOC-4MC	05/15/85 p	G	3	œ	• •
A1334 LIGHT HELLCOPTER FAMILY TRADE-OFF AMALYSIS APPENDIX U VOLUME IX ACN TRAINING	LIGHT HELICOPTER FAMILY TRADE-OFF AMALYSIS APPENDIX U VOLUME IX ACN: 69396 TRAINING	UKKNOMN	029 ARI LHX FILE FOLDER (ALLEN)	<b>О</b> ИКИО <del>н</del> К	05/15/85 P	۵	=	œ	
A10CS LIGHT HELLCOPTER FAMILY TRADE-OFF ANALYSIS APPENDIX K ACN: 69396 MOI	LIGHT HELICOPIER FAMILY TRADE-OFF AMALYSIS APPENDIX K ACN: 69396 MODELS	UNKNOMN	021 ARI LHX FIL" FOLDER (ALLEN)	UNKNOMK	05/15/85 P	۵	:	œ	
A1035 LIGHT HELICOPTER FAMILY TRADE-OFF AMALYSIS APPENDIX V VOLUME X ACN: SAFETY	LIGHT HELICOPIER FAMILY TRADE-OFF AMALYSIS APPENDIX V VOLUME X ACN: 69398 SAFETY	UN 'NOMI'N	032 ARI LHX FILE FOLDER (ALLEV)	UNANOMY	05/15/85 P	0	n n	œ	
A1007 LIGHT HELICOPTER FAMILY TRADE-OFF AMALYSIS APPENDIX W VOLUME X ACM: COST AMALYSIS	LIGHT HELICOPTER FAMILY TRADE-OFF AMALYSIS APPENDIX W VOLUME X ACM: 69396 COST AMALYSIS	UNKNONN	032 ARJ LHX FILE FOLDER (ALLEW)	<b>И</b> ИКИОНИ	05/15/85 P		<b>-</b>	œ	
A1008 LIGHT HELICOPTER FAMILY TRADE-OFF AMALYSIS APPENDIX X VOLUME X ACM: COMMONALITY	LIGHT HELICOPTER FAMILY TRADE-OFF AMALYSIS APPENDIX X VOLUME X ACM: 69396 COMMONALITY	UNKNOMK	032 ARI LHX FILE FOLDER (ALLEN)	UNKNOMN	05/15/85 P	٥	<b>-</b>	œ	
A103S LIGHT HELICOPTER FAMILY TRADE-OFF AMALYSIS APPENDIX Z VOLUME X ACN: DOMMNASH	LIGHT HELICOPTER FAMILY TRADE-OFF AANALYSIS APPENDIX Z VOLUME X ACN: 69396 DOMNHASH	UNKNOMN	032 ARI LHX FILE FOLDER (ALLEN)	UNKNOHK	05/15/85 P	٥	<b>:</b>	œ	
A1010 LIGNT HELICOPTER FAMILY TRADE-OFF AMALYSIS APPENDIX S VOLUME VIII AC 69396 FORCE STRUCTURE	LIGHT HELICOPTER FAMILY TRADE-OFF ANALYSIS APPENDIX S VOLUME VIII ACN: 69396 FORCE STRUCTURE	Unknomn	031 ARI LHX FILE FOLDER (ALLEN)	Unknohn	05/15/85 P	٥	· •	ce .	
A1011 LIGHT HELICOPTER FAMILY TRADE-OFF AMALYSIS APPENDIX T VOLUME VIII ACM 69336 RELIABILITY, AVAILABILITY, AN MAINTAINABILITY/LOGISTICS (RAM/LOG) ANALYSIS	LIGHT HELICOPTER FAMILY TRADE-OFF AMARYSIS APPENDIX T VOLUME VIII ACN: 69396 RELIABILITY, AVAILABILITY, AND MAINTAINABILITY/LOGISTICS (RAM/LOG) AMARYSIS	UNKNOMN	031 ARI LHX FILE FOLDER (ALLEN)	UMKNOMN	05/15/85 P	۵	3	œ	
A1012 LHX BIOMEDICAL INPUT AMALYSIS	70 TRADE-OFF	CPT DOUGLAS E. LANDON, PH.D.	043 ARI LHX FILE FOLOER (ALLEN)	US ARMY AEROMEDICAL RESEARCH LABORATORY, US ARMY MEDICAL R&D COMMAND	01/01/85 P	( <u>)</u>	3	αr	

ANALYSIS OCCUMENTS DATA BASE (ANLDOK FRM)

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IDMO TITLE OF DOCUMENT	DCUMENT	AUTHOR	DOCUMENT EUCATION (ART/ALLEN)	ORIGINATING ORGANIZATION	DATE C: SEC DOF DOCUMENT MEDIA STATUS CLASS TYPE	A STATU	SEC IS CLASS	30C 3 TYPE	
A10:3 LHX TRAINING REQUIREMENTS ANALYSIS	REMENTS ANALYSIS	MAJ MICHAEL POUMADE, CPT BILL ZINN, OR. JACK H MSCRACKEN	OA4 AR! LHX FILE FOLDER (ALLEN)	DIRECTORATE OF TRAINING AND DOC'RTHE, NEW SYSTEMS TRAINING AND SIMULATOR ACQUISITION DIVISION, AVIATION SYSTEMS TRAINING RESEARCH BRANCH	01/01/85 P	u.	->	80	
A1614 RELIABILITY, AVAILABLITY AND "AINTAINABILITY (RAM) RATIONALE FOR THE LHX PROGRAMEXECUTIVE	ABLITY AND LA) RATIONALE REPORT IEXECUTIVE SUMMARY.	UNANOMA	047 AR: LHX FILE FO.DER (ALLEN)	AVNC, AVSCOM, AMSAA, OTEA, AALS	08/53/8£ p	u	<b>5</b>	œ	
A1015 TASK 201: USE STUDY LHX AIRFRAME		UNKNOWN	048 ARI LHX FILE FOLDER (ALLEN)	UNKNOMN	01/01/85 P	4.	>	œ	
A1016 THE INTEGRATED COCKPIT HELICOPTER	(PIT AND THE HH-600	CECIL S. RICHARDSON	OS) ARI LHX FILE FOLDER (ALLEN)	IBM FEDERAL SYSTEMS DIVISION	d //	<b>LL</b> .	っ	a.	
A1017 EMPIRICAL WORKLOAD AND ANALYSIS OF SCOUT HELIC	EMPIRICAL MORKLOAD AND COMMUNICATIONS AMALYSIS OF SCOUT HELICOPTER EXERCISES	MARGARET T. SHAFFER	057 ARI LHX FILE FOLDER (ALLEN)	PARABIGK, INC	04/30/85 P	ů.	19	œ	
A1318 TARGET AUDIENCE DESCRIPTION (POOR COPY OF REPORT SHOWING ASVAB SCORES BY MOS, OWYSICAL CATEGORY, APTITUED AREA SCORE, PERSONAL DATA MENTAL CATEGORY)	CCRIPTION (POOR COPY SVAB SCORES BY MOS, APTITUED AREA SCORE, L CATEGORY)	Unkkoka	613 4R; FILE FOLDER (4EN)	(AKKOAN)	d //	س ۱	UNCL	2E27	
A1019 TRIP REPORT ON VISIT TO THE AVIATION LOGISTIC SCHOOL (ALS), FT EUSTIS, VIRGINIA, ON 21-22 NOV 85 (2-LEVEL MDEFINITION)	I TO THE AVIATION S), FT EUSTIS, NOV 85 (2-LEVEL MAINT	LINDSEY HAGGAR, LOGISTICS MANAGEMENT SPECIALIST	017 ARI FILL FOLDER (ALLEN)	амсри-Lнх-L	03/12/85 P	u_	UNCL	æ F	
A1020 PROJECTED ACCIDENT COSTS FOR THE LA AIRCRAFT, TECHNICAL REPORT TR 83-8	COSTS FOR THE LHX REPORT IR 83-8	MAJ GEORGE J. NESPERENY AND JAMES E. HICKS, PHD	040 ARI FILE FOLDER (ALLEN)	US ARMY SAFETY CENTER, FT RUCKER, AL	d //	u_	UNCL	¥	
A1021 LHX - LÍGHT HELICOPTER EXPERIMENTAL (BRIEFING	YER FAMILY - ING SLIDES)	MAJ GEORGE J. NESPERENY AND JAMES E. HICKS, PHD	040 ARI FILE FOLDER (ALLEN)	US ARMY SAFETY CENTER, FT RUCKER, AL	d / /	u.	UNCI	BREF	
A1022 PROJECTED ACCIDENT COSTS FOR THE LHX AIRCRAFT INFORMATION MEMORANDUM	COSTS FOR THE LHX	LT. GEN ROBERT M. ELTON, OCSPER	040 ARI FILE FOLDER (ALLEN)	PESC-SE	11/23/84 P	u.	UNCL	MERO	
A1023 PROJECTED ACCIDENT COSIS FOR THE LHX AIRCRAFT	COSTS FOR THE LHX	JAMES R. AMBROSE, UNDER SECRETARY OF THE ARMY	040 ARI FILE FOLDER (ALLEN)	OFFICE OF THE UNDER SECRETARY 12/21/84 OF THE ARMY	12/21/84 P	u_	UNCL	MEMO	
A1024 ARMY FAMILY OF LIGHT ROTORCRAFT (LHX) CONCEPT FORMULTAION	IT ROTORCRAFT (LHX)	G.T.SINGLEY 111, DIRECTORATE FOR ADVANCED SYSTEMS, ST. LOUIS MO. AVRADCOM	052 ARI FILE FOLDER (ALLEN)	AIAA AIRCRAFT DESIGN, SYSTEMS AND TECHNOLOGY MEETING	10/19/83 P	<b>L</b>	UNCL	PAPR	
A1025 LHX BASELINE COMPARISON UTILITY (HARDMAN DATA)	IISON SYSTEM TILTROTOR UNKNOMN ITA)	UNKNOMN	053 ARI FILE FOLDER (ALLEN)	UNKNOM	d / /	u.	UNCL	TA8i.	

ANALYSIS DOCUMENTS DATA BASE (ANLDON.FRM)

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DOCUMENT LOCATION (ARI/ALLEN)	353 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	253 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLGER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)
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IDAC TITE OF DOCUMENT	11026 LHX BASELINE COMPARISON SYSTEM HELICOPTER SCAT (HARDNAN DATA)	11027 LHX BASELINE COMPARISON SYSTEM TILTKOTOR UNKNOWN SCAT (HAROMAN DATA)	11028 LHX PROPOSED TILTROTOR SCAT (HARDMAN 1 DATA)	11029 LHX PROPOSED TILTROTOR UTILITY (HARDMAN U	103C LHX BASELINE COMPARISON SYSTEM HELICOPTER UTLLITY (HARDMAN DATA)	.1031 LHX PROPOSED HELICOPTER SCAT (HARDMAN 1	(1832 LHX PROPOSED HELICOPTER UTILITY (HARDMAN UNKNOHN DATA)	1033 LHX DATA FACTORS	NIOJA LHX HELICOPTER EXPERIMENTAL (LHX) (TABLES OF MOSS FOR ANUMANIM PER COMFIGURATION AGAINST EQUIPMENT NAME)	1035 COURSE MODULE REPORT (BCS-68B)	N1036 LHX DESIGN DIFFERENCE WORK SHEET HELICOPTER UTILITY (TABLES SHOWING DIFFERENCE BETWEEN BCS AND PROPOSED DSSIGN)	11037 ADVANCED HELLCOPTER BCS TRAINING CATA 1 SOURCE INDEX (TABLES SHOWING TRAINING COURSES OFFERRED FOR EQUIPMENT CITED.	1838 DIVISION MANPOMER REQUIREMENTS TYPE 1 01VISION: INFANTRY DIVISION (LT)(AVIM AND AVUM PROJECTED NEEDS 8Y MOS FOR SCAT AND UTILITY)	1039 LHX SCENARIO REVISION 11,

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ANALYSIS DOCUMENTS DATA BASE (ANLDON FRM.)

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ORIGINATING ORGANIZATION	DYNAMIC RESEARCH CORPORATION	US ARMY SOLDIER SUPPORT CENTER, NATIONAL CAPITAL REGION,	<b>П</b> ИКМОМК	DYNAMICS RESEARCH CORPORATION	DYNAMICS RESEARCH CORPORATION	UNXNOMN	UNKNOMN	UNKNOWN	UNKNOMN	UNKNOWN	UNKNOMA	UNKNOWN	UNKNOWN	UNKNOMN	UNKNOMN	UNKNOHN	A721-NMS
DOCUMENT LOCATION (ARI/ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	OS3 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	053 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	054 ARI FILE FOLDER (ALLEN)	OSA ARI FILE FOLDER (ALLEN)
AUTHOR	JAMES F DMYER, CONTRACTS SUPERVISOR	OF TRANSMITTAL FOR FREDERICK B. BYARD, LTC. GS. (LHX) DIRECTOR, MID::R CONTRACT	UNIKKOWN	UNKNOWN	UNKNOHN	UNKNOWN	UNKNOHN	UNKNOMK	UNKNOMN	UNKNOHN	UNKNOMN	UNKNOMK	UNKNOMN	UNKNOWN	UNKNOMN	UNKNOMN	BERNARD G. SCHUSTER, RESEARCH 054 ARI FILE FOLDER (ALLEN) PSYCHOLOGIST, COR
IDNC TITLE OF DOCUMENT	A1040 LETTER SUBJECT MODIFICATION OF TASK ORDER 1 (LHX)	A1041 LETTER SUBJECT LETTER OF TRAMSMITTAL FOR TASP ORDFER NUMBER OME (LMX) MOD FICATION FIVE UNDER CONTRACT 0'3/60-84-C-0077	A1042 MEMORANGUM FOR THE RECORD IPR #2 FOR HARDWAN APPLICATION TO THE LIGHT HELICOPTER EXPERIMENTAL (LHX) TASK ORDFER MUMBER ONE UNDER DABIEG-84-C-0077	A1043 LHX 1PR-2 BRIEFING AGENDA (AND HANDOUT MATERIALS)	A1044 AIR ASSAULT DIVISION MANPOWER SUMMARY	A1045 LHX ANALYSIS ASSUMPTIONS	A1346 ADVANCED HELICOPTER TRAINING DATA SOURCE UNKNOMN INDEX	A1347 LHX BASELINE COMPARISON SYSTEM (BCS) HELICOPTER UTILITY	A1048 LHX BASELINE COMPARISON SYSTEM (8CS) HELICOPTER SCAT	A1049 LHX BASELINE COMPARISON SYSTEM (BCS) TILTROTOR UTILITY	A1050 LHX BASELINE COMPARISON SYSTEM (BCS) TILTROTOR SCAT	A1051 LHX PROPOSED HELICOPTER SCAT	A1052 LHX PROPOSED HELICOPTER UTILITY	A1053 LHX PROPOSED TILTRO OR UTILITY	A1054 LHX PROPUSED TILTROTOR SCAT	A10S5 LIGHT HELICOPTER EXPERIMENTAL (LHX) (TABLES SHOMING AVIM,AVUM MOSs AGAINST EQUIPMENT NAME)	A1056 MEMORANDUM FOR THE RECORFD  IN PROCESS REVIEW 83 FOR HARDWAN APPLICATION TO THE LIGHT HELICOPTER EXPERIMENTAL (L-X) TASK ORDER NUMBER ONE HINDER DARTES-BA-C-0077.
10NC	A 1040	A1041	A1042	A1043	A1044	A1045	A1046	A1347	A1048	A1049	A1050	41051	A1052	A1053	A1054	A1055	A1056

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12.11 ONO!	II.LE OF DOLUMENI	TITLE OF DOLUMENS	POCUMENT LOCATION (ARI/ALLEN)	ORISINATING ORGANIZATION	DATE 05 EOCUMENT	MEDIA STATUS	SEC DOC MEDIA STATUS CLASS TYPE	DOC TYPE
A1037 AGENDA FOR IN PROCES HARDMAN APPLICATION HELICOPTER EXPERIMEN ORDER NUMBER OMFINE	A1057 AGENDA FOR 14 PROCESS REVIEW B3 FOR HARDMAN APPLICATION TO THE LIGHT HELICOPTER EXPERIEWIAL (LHX) TASK CROFE NUMBER COMF NUMBER ON FUNDER DABIBO-84-C-077	UMNAUMA	DSA ARI FILE FOLDER (ALLEN)	OVNAMICS RESEARCH CORPORATION	08/90/80	u.	UNCL	BREF
A1058 MEMORANDUM: HARDMAN	HARDMAN B3 AD HOC BRIEFING	BERNARD G SCHUSTER, RESEARCH . PHSYCHOLOGIST, COR	SCHUSTER, RESEARCH _ 055 ART FILE FOLDER (ALLEW) 51, COR	ATZ1-NMS	12/06/85 P	u	UNCL	MEMC
A1059 MEMORANDUM: IN PRO:ESS HARDMAN APPLICATION TO	IN PROCESS REVIEW RA FOR ICATION TO LHX	BERNARD G. SCHUSTER, RESEARCH PHSYCHOLOGIST, COR	055 ARI FILE FOLDER (ALLEN)	AT21-NMS	11/01/85 P	L.	UNCL	MEMO
A1050 MEMORANDUM: IN PROFI HARDMAN APPLICATION	A1060 MEMORANDUM: IN PROCESS REVIEW US FOR HARDWAN APPLICATION TO LHX	BERNARD G. SCHUSTER, RESEARCH PHSYCHOLOGIST, COR	OS6 ARI FILE FOLDER (ALLEN)	ATZI-NMS	01/10/86 P	14.	UNCI	MEMO
A1061 MEMORANDUM: INSPECTION TASK ORDER ONE (LHX)	A1061 MEMORANDUM: INSPECTION VISIT TO DRC FOR TASK ORDER ONE (L-x)	BERNARD G. SCHUSTER, RESEARCH Phsychologist, cor	056 ARI FILE FOLDER (ALLEN)	ATZI-NMS	d 98/01/10	u.	UNCL	OM 3 M
A1062 LETTER OF TRA	A1062 LETTER OF TRANSMITTAL, TASK ORDFER 6 INDER DABTSG-84-C-0077	FREDERICK B BYARD, LTC, GS DIRECTGOR, WID	056 ARI FILE FOLDER (ALLEN)	SWN-1714	0:/13/86 P	ű.	JONOL	LTTR
A1063 AGENDA FOR LHX IPR 5	HX 1PR 5 BRIEFING	UNKNOWN	056 ARI FILE FOLDER (ALLEN)	DYNAMICS RESEARCH CORPORATION	12/11/85 P	la.	UNCL	BREF
A1064 LHX STANDARDS OF GRADE	S OF GRADE	UNKNOMN	056 ARI FILE FOLDER (ALLEN)	DYNAMICS RESEARCH CORPORATION	12/11/85 P	<b>L</b>	UNCL	BREF
A1065 LHX BASELINE COMPAI HELICOPTER UTILITY	A1065 LHX BASELINE COMPARISON SYSTEM (8CS) HELICOPTER UTILITY	UNKNOMN	056 ARI FILE FOLDER (ALLEN)	UNKNOMN	12/12/85 P	11.	UNCL	1.8
A1066 LHX BASELINE COI HELICOPTER SCAT	A1066 LHX BASELINE COMPARISON SYSTEM (BCS) HELICOPTER SCAT	UNKNOMN	056 ARI FILE FOLDER (ALLEN)	UNKNOMM	12/12/85 P	ia.	UNCL	1A8L
A1067 LHX BASELINE COMPARI: TILTROTOR SCAT	COMPARISON SYSTEM (BCS) AI	UNKNOWN	056 ARI FILE FOLDER (ALLEN)	UNKNOWN	12/12/85 P	u.	UNCL	TABL
A1068 LHX BASELINE COMPARI: TILTROTOR UTILITY	COMPARISON SYSTEM (BCS)	UNKNOMN	056 ARI FILE FOLDER (ALLEN)	UNKNOMN	12/12/85 P	u.	UNICE	TABL
A1069 LHX BASELINE COMPARITY TILLTROTOR UTILITY	COMPARISON SYSTEM (BCS)	UNKNOMN	056 ARI FILE FOLDER (ALLEN)	UNKNOWN	12/12/85 P	u.	UNCL	TABL
A1076 LHX PROPOSED TILIROTOR UTILITY	TILIROTOR UTILITY	UNKNOHN	OS6 ARI FILE FOLDER (ALLEN)	UNKNOMN	12/12/85 P	u.	UNCL	TABL
A1071 AFHRL-TR-84-50 TRAIN Factor Data: Methods	SO TRAINING EMPHASIS TASK METHODS OF ANALYSIS	HANS P. JANSEN	063 ARI FILE FOLDER (ALLEN)	MANPOWER AND PERSONNEL DIVISION, BROOKS AFB, TX 78235-5601	d / /	u.	TONO.	<u>*</u>
A1072 AFHRL-TR-84-' EFFECTS OF V ON A-10 AIRC PERFORMANCE	A1072 AFHRL-TR-84-58 FLIGHT SIMULATOR: EFFECTS OF VISUAL DISPLAY FIELD OF VIEW OW A-10 AIRCRAFT CLOSE AIR SUPPORT PERFORMANCE	ROWALD G. HUGHES, LARRY BROWN, D64 ARI FILE FOLDER (ALLEN) CAPT, USAF	. OG4 ARI FILE FOLDER (ALLEN)	OPERATIONS TRAINING DIVISION, WILLIAMS AFB, AZ 85240-6457	d / /	ı.	חאכר	<b>≅</b>

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ATTE SEMPLITY SELES ADVANCES STMULATOR FOR TRIBERT TO MODRIFF. PILOT TRAINING AND MELMET-MOUNTED VISUAL HUBBAKS, ALEX SHANDISPLAY COMFIGURATION COMPARISOMS	RUBERT - MODRUFF, DAVID C. JAL HUBBARD, ALEX SHAN	065 ARI Flie FOLDER (ALLEN)	OPERATIONS TRAINING DIVISION, WILLIAMS AFB, AZ 85240-6457	d //	u	J <sub>K</sub> S	
A1074 HUMAN FACTORS ENGINEERING ANALYSIS (4FEA) FOR 1H5 LIGHT MELICOPTER FAMILY (-1H3) PR	JOHN D ME1ST, DIRECTOR	O61 ARI FILE FOLDER (ALLEN)	U.S. ARMY LABORATORY COMMAND HUMAN ENGINERING LABORATORY, ABERDEEN PROVING GROUND, MD 21005-5051	01/31/86 P	۵	FOUO	œ
A1075 POTENTIAL HEALTH HAZARD ISSUES FOR THE LIGHT HELICOPTER EXPERIMENTAL(LHX) INITIAL HEALTH HAZARO ASSESSMENT	SCOTT MELLS, DOUGLAS LANDON, BARCLAY P. BUTLER, CLARENCE E. RASH, MILLIAM R. NELSON, J.L. HALEY, JR.	062 ARI FILE FOLDER (ALLEN)	BIOMEDICAL APPLICATIONS RESEARCH DIVISION, U.S. ARMY ARROWEDICAL RESEARCH LABORATORY, FORT RUCKER, AL. 36362-5000	d / /	u.	<b>э</b>	~
A1076 "LHX THO LEVEL MAINTENANCE IMPACT ON MAINTAINER TRAINING"	Unkinown	068 ARI FILE FOLDER (ALLEN)	UNKNOMN	a //		د۔	UNKA
A1077 HUMAN FACTORS ENGINEERING ANALYSIS "Préa) For the Light Helicopter Family (LHX)	RICHARD N. ARMSTRONG, (MEL)	Obia ARI LHX FOLDER (ALLEN)	US ARMY HUMAN ENGINEERING LABORATORY	06/11/36 P	43	Fouo	HFEA
A1078 LHX HARDMAN IPR 6 BRIEFING		056A ARI LHX FILE FOLDER (ALLEN)		04/24/86 P	•	3	BREF
A1019 ARMY AVIATION MISSION AREA AMALYSIS (A/A UNN MAA), SECTION IV CONCLUSIONS	/A UNK	(ALLEN)		d //	u.	5	MAA.
A1080 INTERIM REPORT ON DEVELOPING MANPRINT ISSUES		(ALLEN)	ALLEN CORPORATION OF AMERICA	98/01/10	44.	n	RPT
A108) FIMAL REPORT TO THE AC HOC SUBGROUP ON THE ARMY'S LHX PROGRAM	DR. WESLEY L. HARRIS, ET. AL.	ALLEN (LHX MANPRINT ISSUES FILE)	ARMY SCIENCE BOARD	12/01/84 P	i <u>u</u>	<b>5</b>	K91
A1032 EXTENDED APPLICATION OF HARDMAN TO THE LIGHT FAMILY OF HELICOPIERS (L-x) IN-PROCESS REVIEW 7-8 OCT. 86		OSGA ARI LHX FILE FOLDER (ALLEN)	DYNAMICS RESEARCH CORP.	10/01/86 P		=	BREF
A1063 LHX HUMAN FACTORS ENGINEERING ANALYSIS (4FEA)	RICHARD N. ARMSTRONG, HEL FLD. OFF, FORT RUCKER, AL	OBIB ARI LHX FILE FOLDER (ALLEN)	US ARMY LABORATORY COMMAND. HUMAN ENGINEERING LABORATORY, ABERDEEN PROVING GROUND. MD	09/23/86 P	0	FOUO	Edd Edd

Plans and Programs Documents Data Base Listings by

Identification Code (IDNO) Sequence

PLANS/PROGRAMS DOCUMENTS DATA BASE (PLANDUR FRM.)

IDNO	AJJRPR	DOCHMENT LOCATION (ARI/ALLEN)	ORISINATING ORGANIZATION	DATE OF SEC. DOC DOCUMENT MEDIA STATUS CLASS TYPE	A SIATUS	SEC. STATUS CLASS	DOC TYPE
P1001 VIRTUAL COCAPIT COMCEPTS FOR THE LHX	DR. THOMAS A FUNESS	042 ART LHX FILE FOLDER (ALLEN)	AIR FORCE AEROSPACE MEDICAL RESEARCH LABORATORY	06/30/85 P	<b>u</b> _		30
P1002 ISSUES FOR A TRADE-OFF AMALYSIS OF CONVENTIONAL VERSUS ADVANCED CONTROLLERS FOR THE LHX	EDMIN 1. AIKEN	042 ARI LHX FILE FOLDER (ALLEM)	AEROMECHANICS LABORATORY U.S. ARMY RESEARCH AND TECHNOLOGY LABORATORIES (AVSCOM)	06/30/85 P	<b>u</b> -	<b>3</b>	œ
P1004 LHX TEST AND EVALUATION MASTER PLAN	XMCO, INC	001 ARI LHX FILE FOLDER (ALLEN)	U.S. ARMY AVIATION COMMAND	11/08/85 P	u.	5	œ
P100S NEW EQUIPMENT TRAINING PLAN (NETP) UTILITY	UNKNOMN	004 ARI LHX FILE FOLDER (ALLEN)	MATERIEL DEVELOPER AMC/AVSCOM/PM AMCPM-LHX	09/18/85 P	٥	D D	•
P1006 NEW EQUIPMENT TRAINING PLAN (NETP) SCAT UNKNOWN	UNKNOMN	005 ARI LHX FILE FOLDER (ALLEN)	MATERIEL DEVELOPER AMC/AVSCOM/PM AMCPM-LHX	05/31/85 P	۵	∍	۵.
PIOOT COMBAT CREW COMPLEMENT PROGRAM (C3Po) SPECIAL TASK FORCE INFORMATIONACKAGE: STUDY PLAN, DRAFT PROPOSAL FROM CAE FOR FACILITY, DRAFT PROPOSAL FROM FSI FOR GOVERNMENT COMPOSITE MISSION SCENARIO	UNKNOMK	009 ARI LHX FILE FOLDER (ALLEN)	AEROFLIGHTOYNAMICS DIRECTORATE 08/15/85 C3PO DFFICE	d \$8/\$1/80	Ü	:э	cı.
P1008 LHX INTEGRATED LOGISTICS SUPPORT PLAN (ILSP)	ROBERT D. HUBBARD	011 ARI LHX FILE FOLDER (ALLEN)	AMCPM-LHX-T	10/28/85 P	<b>'</b> a	n.	a
P.039 ACQUISITION PLAN NUMBER 2	RONALD K. ANDRESON	050 ARI LHX FILE FOLDER (ALLEN)	AMCPM-LHX	03/20/85 P	۵		٩
PIDID INDIVIDUAL AND COLLECTIVE TRAINING PLAN XMCO, INC FOR LIGHT HELICOPTER FAMILY PROGRAM	XMCO, INC.	016 ARI LMX FILE FOLDER (ALLEN)	U.S. ARMY AVIATION CONMAND AMSAV-PSL	12/01/85 P	9	'n	œ
PIDII TRADE-OFF DETERMINATION (10D)			MATERIEL DEVELOPER	d //	u.	n	Æ
P1012 BEST TECHNICAL APPROACH (BTA)		067 A&B ARI LHX FILES FOLDER (ALLEN)		08/01/85			
PIDI3 TENTATIVE MILITARY OCCUPATIONAL SPECIALIY (MOS) DECISION PAPER				03/31/86			
PIO14 OUTLINE INDIVIDUAL AND COLLECTIVE TRAINING PLAN (GICTP)				02/12/86			
PIDIS STANDARDIZATION PLAN (STDP)				98/82/20			
PIDIS CONFIGURATION MANAGEMENT PLAN (CMP)				02/28/86			
PIGIT SYSTEM SAFETY PROGRAM PLAN (SSPP)				01/31/86			

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PLANS/PROGRAMS DOCUMENIS DATA BASE (PLNDOK FRM)

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IDNO 111LE OF BOCUMENT	OCUMENT (ARTIALLER)	(AKI/ALLEN)	ORIGINATING ORGANIZATION	DOCUMENT MEDIA STATUS CLASS TYPE	IA STATE	STATUS CLASS	S TYPE	
P1018 COMPUTER RESOURCES MANAGEMENT PLAN (CRMP)				01/31/86				
PIGIS PHYSICAL SECURITY PLAN (PSP)				02/28/86				
P1020 ACQUISITION PLAN (AP)				01/31/86				
P1021 PRODUCT ASSURANCE PLAN (PAP)				0:/31/86				
P1022 PRODUCTION READINESS PLAN (PRP)				02/28/86				
P1023 THREAT SUPPORT PLAN (TSP)				09/30/85				
P1024 RATIOMALIZATION, STANDARDIZATION AND INTEROPERABILITY PLAN (RSIP)				12/15/85				
P1025 PROGRAM MANAGEMENT GUIDE FOR LIGHT HELICOPTER FAMILY PROGRAM	XMCO, INC	049 ARI LHX FILE FOLDER (ALLEN)	PROGRAM MANAGER, LHX	06/30/85 p	၁	<u>ה</u>	œ	
P1026 COMBAT MISSION SCENARIO SOFTHARE SPECIFICATION	FLIGHT SYSTEMS, INC	007 ARI LHX FILE FOLDER (ALLEN)	FLIGHT SYSTEMS, INC	07/29/85 P	u_	-3	œ	
P1027 PROGRAM MAMAGEMENT PLAN, ADVANCED ROJORCRAFT TECHNOLOGY INTEGRATION(ARTI)	UNKNOMN	037 ARI LHX FILE FOLDER (Allen)	APPLIED TECHNOLOCY LABORATORY, 11/30/84 US ARMY RESEARCH AND TECHNOLOGY LABORATORIES (AVSCOM) FT EUSTIS, VA, 23604	11/30/84 P	jte	Þ	a.	
P1028 MEMORANDUM FOR CG, OTEA, LHX BRIEF TO USA AMBROSE	MAJ THOMAS E. BURCH	039 AR: LHX FILE FOLDER (ALLEN)	CSTE-ASD-E, OTEA	07/30/84 P	u.	n	1	
P1029 FSD TEST PROGRAM UPDATE	B.G. R.K. ANDRESON, LTC JOHN MAGROSKY, LHX TEST COGRDINATOR	ANDRESON, LTC JOHN 018 ARI LHX FILE FOLDER LHX TEST COORDINATOR (ALLEN)	АМСРМ-СНХ	d //	u_		00	
P1030 LHX MISSION EQUIPMENT WEIGHT (TABLES FROM ANOTHER UNSPECIFIED DOC)	UNKNOWN	060 ARI LHX FILE FOLDER (ALLEN)	UNKNOMN	03/03/86 P	u	ə	<b>-</b>	
P1031 SELECTED ACQUISITION REPORT (RCS:DD-COMP(Q&A)823) PROGRAM: LIGHT HELICOPTER FAMILY (LHX)	UNKNOMN	059 ARI LHX FILE FOLDER (ALLEN)	UNKNOMM	12/31/85 P	11.	5	œ	
P1033 LIGHT HELICOPTER FAMILY (LHX) PM/MATERIEL SYSTEMS ASSESSMENT (PMSA)	UNKNOWN	OIS ARI LHX FILE FOLDER (ALLEN)	АУЗСОМ	11/20/85 P	ш.	ے	œ	
P1034 LHX BRIEFING OTEA 5 JULY 1984.	MAJ PAUL FARDINK, LTC RON CARPENTER	038 ARI FILE FOLDER (ALLEN)	APPLIED TECHNOLOGY LABORATORY, 01/05/85 P US ARMY REASEARCH & TECHNOLOGY LABORATORIES, AVIATION SYSTEMS COMMAND	01/05/85 P	u.	<b>&gt;</b>	BREF	

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PLANS/PROGRAMS DOCUMENTS DATA BASE (PLNDOK FRM)

IDMO 111LE UF DOCU	TITLE UF DOCUMENT	AJ140R	DOCUMENT LOCATION (ARI/ALLEN)	DOCUMENT LOCATION ORIGINATING ORGANIZATION DOCUMENT MEDIA STATUS CLASS TYPE	DATE OF DOCUMENT MEDIA STATUS CLASS TYPE	IA STATU:	SEC. DCC S CLASS TYPE = ===================================	300 179E ====
91035 LHX C2E PLAN		MAJ PAUL FARDINK, LTC RON CARPENIER	038 ARI FILE FOLDER (ALLEN)	APPLIED TECHNOLOGY LABORATORY, 09/13/84 P US ARMY REASEARCH & TECHNOLOGY LABORATORIES, AVIATION SYSTEMS COMMMAND (OTEA)	09/13/84 P	u.	<b>&gt;</b>	BREF
P1036 THE NEW LHX SYSTE PLAN	P1036 THE NEW LHX SYSTEM MANPRINT MANAGEMENT PLAN	COL F. MAYER, DIR OF C.D. ET AL	036 ARI FILE FOLDER (ALLEN) (SUPERCEDES ALL OTHERS)	US ARMY AVIATION CENTER & FT. 06/18/86 P RUCKER	d 98/81/90	6	<b>=</b>	PLAN
P1037 LHX NBC		UNKNOHN	041 ARI FILE FOLDER (ALLEN)	UNKNOWN	d //	٥	<b>-</b>	BREF
P1038 LHX TSM-ISSUES GENERATED FT. RUCKER MEETING.		FROM 3 DEC 1985 MAJOR RICHARD NEIL, ASST LHX TSM		LHX-TSM	12/03/85 P	u_	3	
P1039 TSM-LHX SYSTEM STATUS REVIEM, 13-15 MAY 1986	ATUS REVIEW, 13-15 MAY	TRADOC SYSTEM MANAGER- LIGHT HELICOPTER FAMILY	069 ARI LHX FILE FOLDER (ALLEN)	US ARMY AVIATION CTR & FORT RUCKER	05/16/86 p	ű.	n	
P1040 FIELD CIRCULAR 100-1, THE ARMY OF EXCELLANCE	0-1, THE ARMY OF	FORCE DESIGN DIRECTORATE	070 ARI LHX FILE FOLDER (ALLEN)	US ARMY COMBINED ARMS COMBAT DEVELOPMENT ACTIVITY	09/01/84 p	L,	<b>¬</b>	O u

LHX Responsible Agencies
Listing by Command Sequence

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#	NAME OF POINT OF CONTACT	SYMBOL	COMMAND	SYMBOL COMMAND STATION	CIIY	ST A/C TELEPHONE AUTOVON	AUTOVON	RECORD NUMBER
-	MR. ARMSTRONG	SLCHE-FR	AMC	FORT RUCKER		41 205 255-2203	6663303	,
_	MR. C. READING	AMCPH-LHX	ANC	AVSCOM	ST LOUIS	MO 314 263-1270	643-1270	51030
_	נזכ כראא	AMCPH-LHX	AMC	AVSCOM	ST L00/15	MO 314 263-1813	643-1813	51013
_	MR. LEMANSK!	AMS-PN-TONEN	AMC	PM-TRADE	ORLANDO	FL 305 646-5761	791-5761	61049
_	MR. GAINER	PERI-IR	ARI	FORT RUCKER		AL 205 255-3686	558-4404	61001
_	MAJ HINTZE	PERI-SM	ARI	ARI, HQ	ALEXANDRIA	VA 202 274-8917	284-8917	61040
	MAJ DVORSKY	CSTE-AVSD	OTEA	OTEA, HQ	FALLS CHURCH	VA 202 756-2290	289-2290	61044
	LTC GRAM	TSM U/LHX	TRADOC	FORT RUCKER		AL 205 255-2160	558-2160	61002
	LTC MC CLELLAN	ATCD-8	TRADOC	FORT MONROE		VA 804 727-4243	680-4243	61043
_ `	MAJ RUSHO	TSE U/CHX	TRADOC	FORT RUCKER		AL 205 255-2205	558-2205	61006
_	CPI SAUEX	ATZQ-CDM-R	TRADOC	FORT RUCKER		AL 205 255-4576	558-4576	61041
_	MJ STOKER	ATCH-MSF	TRADOC	FORT LEE			687-1834	51046
_	MSG TANNO	ATZH-DIN	TRADOC	FORT GORDON		GA 404 791-2993	780-2595	61047
_	PT TUCKER	ATZI-NPM-S	TRADOC	SSC-NCR	ALEXANDRIA	VA 202 325-0949	221-0046	9000
J	N3 WAERSCH	ATSQ-TDN	TRADOC	FORT EUSTIS		VA 804 878-6608	927-6608	61045
								,

### LHX MANPRINT ISSUES DATA BASE

## Data Base Management System Design

### Introduction

The following describes the design of the Allen LHX MANPRINT data base management system (DBMS). This DBMS relates LHX MANPRINT issues to the sources, documents, and other materials that create or explain the issues and the findings of analyses as reported in analytical documents. In addition, a variety of report forms was developed to produce hard copy for analysts and government officials who, in making decisions, may wish to consider these data. Examples of these forms are attached.

### DBMS Files

The DBMS consists of a number of related files:

- Source document files that contain data about the documents that were studied
- Issue files that list data on "issues" identified during the study
- Agency files, with information about agencies with LHX responsibilities

### Source Documents

Source documents are categorized into requirements, analysis, and plans and program management documents:

Requirement Documents. Requirement documents are those which establish identified needs. The data base defined for these documents relates issues identified in analysis documents to the specific requirements found in the requirement source documents. Examples of requirements documents are:

- Required Operational Capability (ROC)
- Letter of Authorization (LOA)
- Request for Proposals (RFP)

Analysis Documents. Analysis documents report the results and display the data of the analyses initiated by a requirements document, such as the ROC. The data base for analysis documents relates the documents to the requirement that prompted the analysis, and to the resulting issues. Examples of analysis documents are:

- Human Factors Engineering Analysis (HFEA)
- Trade-off Analysis (TOA)

<u>Plans and Program Management Documents</u>. The plans and program management document data base contains data that describe how issues raised in the analyses are planned to be resolved, or if not resolved, raised as unresolved issues. The plans or programs existing or under development are identified. Examples of plans and program documents are:

- Test and Evaluation Master Plan (TEMP)
- New Equipment Training Plan (NETP)

### Issues

The issues in this data base are mostly in the form of questions, which have emerged from requirements and analysis source documents, and other inputs. Each issue consists of a record that relates issue statements to sources that identify or describe the issue and analyses that illuminate it.

# Responsible Agencies

The Responsible Agency data base contains data about the agency having responsibility for the resolution of the issue, or the preparation of a specific report.

The following scheme illustrates the structure of the Data Base Management System (DBMS).

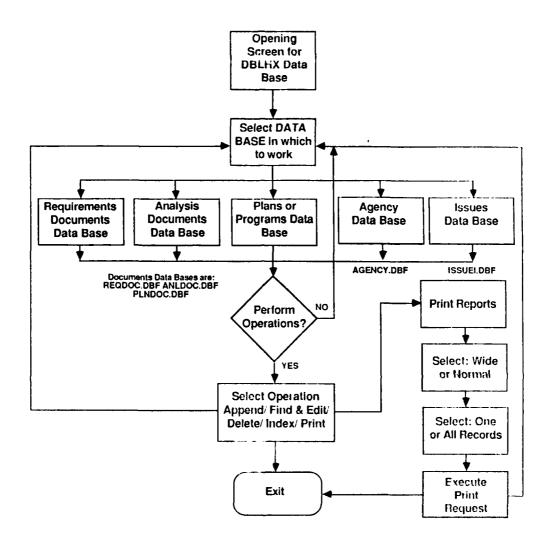


Figure A-1. LHX MANPRINT Issues data base design. Allen Corporation of America, October 1986

## Access and Use of the LHX MANPRINT Issues Data Base

## **General**

The overall purpose of the DBMS is to facilitate data retrieval and support for the documentation of critical MANPRINT issues for consideration by Army managers. The DBMS will not do the analysis. It will, however, permit accessing issue-related data in a timely and flexible way in order to provide reports for use in the analysis.

The Introductory Screens identify the DBMS and state the rules for accessing data. To the largest extent possible, the program is menu driven so that users can select the operation they wish to perform. However, access to a dBASEIII query language is permitted. This will enable the user to ask questions that have not been foreseen and facilitated through selecting menu items. Thus, the first few screens will provide the user a view of the available options. These screens are the results of programs and their use will invoke other programs to display information of interest. The user should keep in mind that the query language is always available as a menu option to allow the user flexibility to obtain other information.

A password is required of the user to enter the files for alteration or other use, providing a measure of security for the data. The current password and the method for changing it, as well as the documentation for the PASSWORD program, may be found in the "Administrator's Annex." This annex also includes installation procedures.

The data base management system uses the programming language called "dBASEIII," a product of Ashton-Tate, Incorporated. It is usable on an IBM or compatible microcomputer, operating under MS-DOS 2.00 or higher. Generally, the data base will be usable on any computer that will run dBASEIII, although the programs were developed on a computer with 640K of random access memory. Because the Issues data base is so large, the data base management system should be run on a computer with a 10 megabyte hard disk. A smaller Issues data base would allow running the DBMS on a floppy disk based system, but the hard disk also provides faster response to queries. The data bases and related programs are supplied on three double-sided floppy diskettes. <u>Users must supply their own copy of</u> dBASEIII. In addition, reports shown in this document were produced on a wide carriage printer, and reduced photographically for this report. It is recommended that a wide carriage dot matrix printer be used for reports. although users may elect to use the more common letter-width printer for reports from data bases other than the ISSUEI data base.

#### Data Base Types

The data bases contain MANPRINT information related to three classes of activities:

- Operation
- Maintenance
- Support

## Source Document Data Bases

There are three document data bases, one for each of the three kinds of documents that we have categorized as the LHX available documents.

- Requirement Documents
- Analysis Documents
- Plans and Program Management Documents

## <u>Issues Data Base</u>

The Issues data base is linked to the Document data bases to derive reports that list the basis for the ISSUE and support it. In addition, the Issues data base is linked to the Agency data base.

## Responsible Agency Data Base

The responsible agency data base contains names and pertinent data of the agency having responsibility for the resolution of a specific issue.

# Data Base Names and Fields

Because dBASEIII places limitations on the length of file names, the following data base names have been selected for the associated data types:

REQDOC	Requirements Documents
ANLDOC	Analysis Documents
PLNDOC	Plans/Programs Management Documents
ISSUEI	ISSUES
AGENCY	AGENCY

## Data Base Programs

Programs have been written to enable ease of entry and data retrieval from the files. The following programs provide for access to and use of the various data bases:

DOCUI	DOCU	PASSWORD	REKENT	REQMEM
ANLMEN	PLNMEN	ISSMEN	AGENMEN	PNT1
PNT2	FΙ	LISTER	HEADN	HEADIN
ISFIND	ISDEL	PNTONE	HEADLIS	LISTERIN
LISTERN				

 $\underline{\text{DOCU1}}$ . This is the initial program for entering the DBMS. It displays a screen that invites the user to enter 'Y', if authorized to enter the data base. If the user is not authorized, then 'N' may be pressed to permit an escape. If the user types 'Y', the next program invoked is the password program. (DOCU is a program that displays the title box seen in DOCU1.)

Welcome to the Allen LHX Issues Data Base Management System

If you are authorized to use this system, press "Y". You will then be asked for the password. Otherwise, press "N" to exit.

DATE: 12/11/86 TIME: 15:29:48

ENTER SELECTION AND PRESS RETURN:

 $\frac{Password}{Password}. \quad \text{This is the program that enables entry to the DBMS.} \quad A \\ \text{series of pound signs appears as the user types the correct sequence of characters in the password.} \quad \text{If the user mis-types, the program returns the computer to DOS.} \quad \text{Otherwise, the program enters the main menu.} \quad \text{(The password currently in use is documented separately in the Annex.)} \\$ 

Welcome to the Allen LHX Issues Data Base Management System

If you are authorized to use this system, press "Y". You will then be asked for the password. Otherwise, press "N" to exit.

DATE: 12/11/86 TIME: 15:29:48

Please Enter the Password ===== >

<u>REKENT</u>. At the main menu program for the DBMS (REKENT), the user may select a data base by pressing the first letter of the name of the data base and the return key. (In general, the capitalized first letter of the selection is the key to press. In some cases, as in aG)ency, it is the second letter, uppercase G, which is the key to press.) Each of the programs from the main menu makes available the same kinds of operations for the data base selected.

The Main Menu permits access to the following data bases:

Requirements Documents Analysis Documents Plans and Programs Documents Issues Agency

It also permits returning to the dot prompt (.) or to DOS. After selecting a data base and performing an operation, the user is returned to the main menu for any further operations.

15:30:50	MENU	12/11/86
	LHX DATA BASES	
:========	=========SELECT A DATA 8ASE=============	
	R)equirements documents database	
	A)nalysis documents data base	
	P)rograms/planning documents data base	
	I)ssues data base	
	aG)ency data base	
	X: EXIT DBASE TO DOS C: return to DBASE '.' PROMPT	
YOUR SELECTION:		

 $\underline{\text{REQMEM}}.$  This is the program that uses the Requirement document data base. It permits the following operations to be performed:

APPEND FIND AND EDIT A RECORD DELETE A RECORD INDEX THE DATA BASE PRINT RECORDS EXIT

# LHX REQUIREMENTS DOCUMENTS DATA BASE

Select the operation you wish to perform

A)ppend records

F) ind and edit record

D)elete record

I)ndex data base

P)rint record

eX)it

YOUR SELECTION:

Append. This program makes a copy of the last record in the data base and displays the copy in the full edit mode. The only difference between the record displayed on the screen and the one from which it was made is the record number which appears at the top of the record in the area that is not highlighted. Changes may then be made to this copy in order to input the data associated with this new record. Any number of records may be appended by pressing the "Page Down" key. Records that are appended in this way will be saved when the user exits from APPEND by pressing the Ctrl key and the "W" key at the same time (called: CTRL-W). This causes the new record(s) to be appended to the set of old records. Pressing the ESC key or pressing CTRL-Q will abort the append process. In this latter case, any records entered prior to pressing ESC or CTRL-Q will be lost, and the data base will be returned to its previous (unappended) condition. Before leaving the append function, the program automatically reindexes the data base so that appended records may be found. Indexing the documents data bases takes very little time; indexing the Issues data base takes about two minutes.

Appending records to REQUIREMENTS DOCUMENT DATA BASE

Press CTRL-W when done appending.

The record you see will be a copy of the last record in the data base. Any changes you make will apply to this NEW record.

You may append as many records as you wish. Press any key to continue...

The following is typical of the display that would appear if the user selected "Append" and pressed return.

INSERT 11 Record No. R1010 IDNO LIGHT HELICOPTER SYSTEM FULL SCALE DEVELOPMENT REQUEST FOR PROPOSAL, TITLE DAA109-86-A0004,LHX HQ, AVIATION SYSTEMS CMD, 4300 GOODFELLOW BLVD. ST LOUIS MO. AMCPM-ORIG\_ORG LHX AUTHOR AMCPM-LHX 11/24/86 DATE 012 ARI FILE FOLDER (ALLEN) LOCATE WHENEXP YES PERT MEDIA STATUS 20 SECLAS TYPE

Find and Edit. This program requires entering the specific Identification Number (IDNO) for the record desired. For the document data bases, the IDNO is a five-digit alphanumeric that uniquely identifies the particular document. Requirements documents always start with the letter 'R', and run upwards from R1001. Analysis documents always start with the letter 'A' and run upwards from A1001. Finally, Plans/Programs documents always start with the letter 'P' and run upwards from P1001. For the Issues data base, the unique identifier is called the issue code (ISSU\_CD field). In addition, the Issues data base records may be accessed using the "Critical Question Number," which appears in the System MANPRINT Management Plan. In view of the foregoing, a valid list of IDNOs, and/or Critical Question Numbers should be available to the user, or else the message "DOCUMENT NOT FOUND" will be shown (if in the document data bases) or "RECORD NOT FOUND" (if in the Issues data base.)

The following shows the sequence of screens for finding a specific record.

ENTER IDNO FOR DESIRED DOCUMENT:

ENTER IDNO FOR DESIRED DOCUMENT:

R1010

Record No. 10 INSERT IDNO TITLE LIGHT HELICOPTER SYSTEM FULL SCALE DEVELOPMENT REQUEST FOR PROPOSAL. DAA109-86-A0004, LHX ORIG ORG HQ, AVIATION SYSTEMS CMD, 4300 GOODFELLOW BLVD. ST LOUIS MO. AMCPM-LHX AUTHOR AMCPM-LHX DATE 11/24/86 LOCATE 312 ARI FILE FOLDER (ALLEN) WHENEXP PERT YES MEDIA ρ STATUS 20 SECLAS IJ 3qv"

Delete a Record. This program requires entering the IDNO of the record to delete. If the IDNO the user enters does not exist, the "Document not found" message will be shown. If the record is found, the IDNO and the title of the document will be displayed, and the user is asked to verify that the found record is the one to delete. If the answer is yes, when the user presses 'Y', the record will be marked for deletion and displayed to the user. The user will then press any key to complete the deletion. It is possible to abort the deletion at any time up to this point by pressing the ESC key. The following illustrates the screen sequences for deleting a record.

ENTER THE IDNO OF THE RECORD TO DELETE:

ENTER THE IDNO OF THE RECORD TO DELETE: R9999

ENTER THE IDNO OF THE RECORD TO DELETE: R9999

R9999 LIGHT HELICOPTER SYSTEM FULL SCALE DEVELOPMENT REQUEST FOR PROPOSAL, DAA10 9-86-A0004, LHX

IF THIS IS THE RECORD TO DELETE, PRESS YY

11 \*R9999 LIGHT HELICOPTER SYSTEM FULL SCALE DEVELOPMENT REQUEST FOR PROPOS AL, DAA109-86-A0004, LHX

HQ, AVIATION SYSTEMS CMD, 4300 GOODFELLOW BLVD. S

T LOUIS MO. AMCPM-LHX

AMCPM-LHX

11/24/86 012 ARI FIL

E FOLDER (ALLEN)

YES P 2D U M ...

Press any key to continue...

<u>Index the Data Base</u>. This is a procedure that arranges the records in a specific sequence. The documents' data bases are arranged in IDNO sequence. A message appears during the period when indexing is happening to say that the operation is being performed. No other message appears. In the Issues data base, the indexing is done twice, because of the option to provide access to records on the basis of either Issue Code (Issu\_CD), or Critical Question Number (MMPQNO). Again, the operation is automatic, with messages being presented to keep the user aware of which indexing operation is being performed.

<u>Print</u>. This program enables the printing of a single record, or the printing of all the records in the data base. For all data bases other than the Issues data base, if Print is selected, the user is asked to select either printing on a wide carriage printer or a normal carriage printer, in addition to selecting "one record to print" or printing all the records. If the user selects one record, then the user must specify the IDNO, Issu\_CD, or critical question number of that record. If the user selects all records, then the user is given a choice of several different record listing formats to choose from in another menu. (Not all data bases have multiple formatted reports.)

Document Print
Menu

DATA BASE: REQUIREMENTS

DOCUMENTS

O)ne for single record
A)ll for all records
x) to exit

Press any key to continue...

Issues Print. The Issues Print program is more complicated than programs for displaying data about the documents because there are different kinds of reports that are available. In addition, the reports require the use of a wide carriage printer. Normal printer reports are not available for the Issues data base. The following sequence shows selection of either the issues fields reports or the memo fields reports, selected by either choosing one or all reports.

Document Print Menu DATA BASE: ISSUES

O)ne for single record

A)ll for all records

x) to exit

Press any key to continue...

SELECT REPORT TYPE

I)ssues fields report
P)roposed solutions report

eX)IT

Press any key to continue...

SELECT REPORT TYPE

1)ssues fields report
P)roposed solutions report

eX)[]

Press any key to continue...I ENTER THE ISSUE CODE FOR DESIRED record 01003

SELECT REPORT TYPE

I)ssues fields reportP)roposed solutions report

eX)IT

Press any key to continue...P
ENTER THE ISSUE CODE FOR DESIRED RECORD: 01003

TO SELECT IMPACT/PROPOSED SOLUTION, PRESS "Y" OTHERWISE, PRESS RETURN.

WHAT IS YOUR SELECTION? Y

Document Print Menu

FORMATTED REPORTS

SELECT DESIRED REPORT FORM

I)SREP-S (List by SMMP QUESTION, index: MMPQNO + TYPECD + ISSUTYP)

L)ISTER (List by SMMP QUESTION, of IMPACT, SOLUTION MEMO fields)

T) ISREP-T (List by CRITICAL SCORE within MANPRINT DOMAIN index: TYPECD + CSCD)

N) LISTERN (List by CRITICAL SCORE within MANPRINT DOMAIN, of MEMO fields)

eX)it

YOUR SELECTION:

Press any key to continue...

A-118

EXIT. This program permits the user to return to the main menu.

<u>PNT1 and PNT2</u>. These subroutines used in the print program to facilitate printing desired records.

<u>LISTER</u>. This program will provide a printout of memo fields of records within the Issues data base, arranged in the sequence of critical question number, TYPECD, and ISSUTYP.

<u>LISTERN</u>. This program will provide a printout of memo field of records within the Issues data base, arranged in the sequence of Issu\_CD.

<u>LISTERIN</u>. This program will provide a printout of memo fields of a single record selected by input of the Issue code.

HEADN, HEADIN, and HEADLIS. These are formatting programs used with LISTER programs to provide appropriate headings.

<u>ISFIND</u>. This is a program called from ISSMEN that finds a requested record from input by the user in either the form of critical question, or of Issue code.

ISDEL. This is a program called from ISSMEN that deletes a requested record in accordance with input by the user. Since several records in the Issues data base may have the same critical question number, ISDEL requires that both critical question number and Issue code be input by the user. The user first inputs the Issue Code of the desired record. When the computer has finished searching, it displays all the record numbers, ISSU\_CD, MMPQNO, and critical question for review by the user. The user is then asked to select from among the records shown the specific record where the Issue code and the critical question Number are those of the record to delete. The user is then asked to confirm that the record is the correct one. Finally, the program displays the records that have been 'deleted.' The following screens show the sequence of steps performed:

ENTER THE ISSUE CODE OF THE RECORD TO DELETE:

ENTER THE ISSUE CODE OF THE RECORD TO DELETE: 09999

Record\* ISSU\_CD MMPQNO CRITQUEST

103 09999 1.20R CAN SINGLE PILOT OPERATION 8E AC
HIEVED WITHOUT MILLIMETER WAVE RADAR AND INTEGRATED COMMUNICATION, NAVIGATION, A
ND IDENTIFICATION AVIONICS?

ENTER THE CRITICAL QUESTION NUMBER (MMPQNO) OF THE RECORD TO DELETE:

Record# ISSU\_CD MMPQNO CRITQUEST
103 09999 1.20R CAN SINGLE PILOT OPERATION BE AC
HIEVED WITHOUT MILLIMETER WAVE RADAR AND INTEGRATED COMMUNICATION, NAVIGATION, A
ND IDENTIFICATION AVIONICS?

ENTER THE CRITICAL QUESTION NUMBER (MMPQNO) OF THE RECORD TO DELETE: 1.20R

Record# IS3U\_CD MMPQNO CRITQUEST
103 09999 1.20R CAN SINGLE PILOT OPERATION BE ACHIEVED WITHOUT MILLIMETER WAVE RADAR AND INTEGRATED COMMUNICATION, NAVIGATION, AND IDENTIFICATION AVIONICS?

IF THIS IS THE RECORD TO DELETE, PRESS Y: Y

DISPLAYING ALL DELETED RECORDS...

Record# ISSU\_CD MMPONO CRITOUEST

103 \*09999 1.20R CAN SINGLE PILOT OPERATION BE AC 
HIEVED WITHOUT MILLIMETER WAVE RADAR AND INTEGRATED COMMUNICATION, NAVIGATION, A 
ND IDENTIFICATION AVIONICS?

Press any key to continue...

ANLMEN and PLNMEN. These are menu programs identical to REQMEM, and result in access to the Analysis Documents data base or Plans and Programs data base, respectively, to perform identical operations.

 $\underline{FI}$ . This is a directory program that permits quick recall of a user-selectable set of file names, accessed according to their suffix, DBF, NDX, PRG, TXT, and DBT. To use the program, at the dot prompt (.) type "DO FI". A list of selectable file types, including the selection to display all files, will be displayed. Selection is made by pressing the first letter of the file type desired. At the lower portion of the screen will be displayed the actual file names available. This program is useful when interacting with the query language directly since precise filenames must be used. It is equivalent to the command: "Display files like \*.xxx, where xxx represents the suffix of interest, and the \* represents all prefixes with the xxx suffix.

This is the Allen LHX Data Base Management System

LHX FILES

Press the first letter of the type of file you wish to be displayed.

- 0) ata base files
- P) rogram files
- N) index files
- T) ext files
- F) ormat files
- M) emo files
- A) 11 files

ENTER SELECTION:

x) exit to Obase

Press any key to continue...

DATE: 11/03/86 TIME: 11:28:34

## Index files

Data base files are frequently "indexed." (Indexing puts the files in a desired order. It is similar to sorting, but does not create a new data base which sorting would do. Indexing creates a set of pointers that tell the computer which records should follow other records according to some indexing criterion specified by the person who did the indexing.) Indexing is necessary for using more than one data base at a time. All data bases containing document IDNOs will have an index file that indexes the records on the basis of the IDNO. These files are called:

PLNDEX related to the PLNDOC data base ANLDEX related to the ANLDOC data base REQDEX related to the REQDOC data base AGNDEX related to the AGENCY data base

Thus, a typical command construction would be:

#### USE ANLDOC INDEX ANLDEX

This would ensure that the ANLDOC Data Base records were shown in the order of the IDNOs. When data are selected from several data bases they must be selected on the basis of a common field, in this case the IDNO. For the most part, the filenames for the index files suggest the fields upon which the index was made. Thus, ISSCD is an index file for the ISSUEI data base, in which the ISSU\_CD is used as the index key. For the index, ISMIYTY, the keys are the critical question number, the type code, and the issue type. Whenever new records are added to any data base it is advisable to index the data base following this action. The reason is that the data base programs use indexed files to find records or print them. If a new record has not been included in the index, it will not be found by the program even though it exists.

#### Reports

Reports may be obtained from the data bases in several ways:

<u>Screen reports</u>. Screen reports are normally obtained through the use of the query command available at the dot prompt (.). For instance, to obtain a listing of the IDNO, the ISSUE, and the CRITSCR for all the records in the ISSUEI data base for which the CRITSCR was equal to 'E' one would type:

. USE ISSUEI INDEX ISSCD . LIST IDNO,ISSUE,CRITSCR,FOR CRITSCR = 'E'

Inquiries like this are done interactively.

<u>Hard copy reports</u>. Hard copy reports can be obtained either interactively as with screen reports, or can be the result of invoking a program.

Reports by program. Programmed reports are those which result from invoking a print program. The program called LISTER is a print program. It uses the ISSUEI data base.

<u>Formatted reports</u>. Formatted reports are those which have been generated by the dBASEIII report generator. These reports do not display contents of MEMO fields, but display only fields that are <u>not</u> memo fields which have been selected for the report.

Reports that are available to display data in the ISSUEI data base are:

ISREP-S, LISTER, ISREP-T, AND LISTERN

The first report is invoked through using the query language by typing: REPORT 10 PRINT ISREP-S, or it may be obtained by selecting it from the print menu, available in Issues data base operations. ISREP-S uses the index ISMTYTY and produces reports that are ordered in SMMP critical question number sequence. LISTER produces memo fields reports, ordered in critical question number sequence. ISREP-T and LISTERN produce the same kinds of reports as the other two except that the listings are ordered by criticality score within MANPRINT domains, with the "essential" score within operation being shown first.

# DATA BASE STRUCTURE AND FIELD DEFINITIONS

The following pages document the structure of the data bases and define the fields. Examples of data collection forms are also provided.

# Document Data Base Field Names

The following specifies the Field Names for the Document DATA BASES (REQDOC, ANLDOC, PLNDOC) and describes them:

FIELDNAME	TYPE	LENGTH	DESCRIPTION
IDNO	CHAR	5	Unique identifying serial number for each record. Leading Alpha Character: R1001, A1001, P1001 to picture (X9999).
TITLE	CHAR	255	Document title in full. (First 20 characters are reserved for short subject word).
ORIG_ORG	CHAR	255	Originating organization as shown on the Title page or the 1434 if it exists.
AUTHOR	CHAR	255	The name of the organization or person(s) who prepared the report or document.
DATE	DATE	8	Date of publication.
LOCATE	CHAR	80	The place where the document may be found.
WHENEXP	CHAR	20	The data when the document will be available.
PERT	CHAR		Y or N as to pertinency to ASARC Issues.
MEDIA	CHAR	1	Code to indicate the medium in which the document is available: P,print; U, microform; V,video; S, 35mm slides.
STATUS	CHAR	2	Code to specify the timeliness of the document: D, draft; FD, final draft; F, final; U, Unknown.
SECLAS	CHAR	4	Security Classification, as specified in DTIC DED.
TYPE	CHAR	4	Document type: M, memo; TR, Technical Report; RFP, request for proposal; others as specified in the DED.

# <u> Issues Data Base Field Names</u>

The following specifies the Field Names for the <u>ISSUEI DB</u> and describes them:

FIELDNAME	TYPE	LENGTH	DESCRIPTION
ISSU_CD	CHAR	5	Unique identifier code for each record in
_	<del>-</del>		the Issues Data Base, consisting of a
			prefix (0, M, or S) and a four-digit suffix
			1001 to 9999 within each class.
			O, operator; M, maintainer; S, support
ISSUTYP	CHAR	15	A phrase to classify the issue for sorts.
CRITSCK	CHAR	3	An alphabetic character indicating the
			criticality of the issue. E=essential,
			H=high, M=medium, L=low.
ISSUE	CHAR	254	Concise statement of the issue.
CRITQUEST	CHAR	250	The critical question as it appears in the
			System MANPRINT Management Plan.
ISSUEM	<u>MEMO</u>	10	Same concise statement in a memo field.
CONSUP	CHAR	160	Statement identifying source supporting
			selection of item as an issue.
STATUSCD	CHAR	5	Code to reveal current status of ISSUE:
			PEND, Pending; RES, Resolved; UNK, Unknown;
			UNRES, Unresolved
PROPSOL	MEMO	10	Statement of the proposed solution to the
			issue.
IMPACT	MEMO	10	Statement of the effect the unresolved issue
			could have.
AGNCY CD	CHAR	5	Code to identify the agency in the AGENCY
			data base having responsibility for the
			resolution of the issue
RESPAGENCY	CHAR	10	Agency responsible for resolution of Issue.
TYPECD	CHAR	1	Code to identify activity class of Issue:
			O=1, Operator; M=2, Maintainer; S=3, Support
IDNO	CHAR	55	IDNO of the source document that is cited
			as related to or describes the reason for
			the issue. This field links the issue to
			the specific document data base.
REFCD	<u>CHAR</u>	255	The page and/or paragraph number of the
			source document referring to this issue
			record.
RELATE_I	<u>MEMO</u>	10	This memo field, up to 4000 characters,
			is for describing related issues and types
			(of significance to the individual).
RELATE_U	MEMO	10	This memo field, up to 4000 characters,
			is for describing related issues and types
			(of significance to the Unit).
RELATE_A	MEMO	10	This memo field, up to 4000 characters,
<del></del>			is for describing related issues and type
			(of significance, Army-wide).
RELATE_F	MEMO	10	This memo field, up to 4000 characters,
_			is for describing related issues and types
			(of significance for facilities).

# Issues Data Base Field Names (continued)

FIELDNAME	TYPE	LENGTI	H DESCRIPTION
WHENRES	CHAR	20	The name of the event (like FSD) by which the
	-		the issue is to be solved.
SOLUSRS	CHAR	254	Identification of source of solution to
			issue.
RISK	CHAR	254	Relative risk, high, medium, low if issue
			is not resolved.
MMPQNO	CHAR	30	Allen Corp SMMP Critical Question number.
CQNO	CHAR	5	SMMP Critical Question Number.
BLNKLN	CHAR	20	A series of periods (.) to enable spacing
			between successive records.
CSCD	CHAR	1	Critscr code: E=1,H=2,M=3,L=4

Agency Data Base Field Names

The following specifies the Field Names for the Agency DB and describes them:

FIELDNAME	TYPE	LENGTH	DESCRIPTION
AGNO	CHAR	5	Unique identifying number for each record.
AGNCY_CD	CHAR	5	Unique identifying serial number for each
IDNO	CHAR	5	AGENCY.  IDNO of the document for which the POC has
ISSU_CD	CHAR	5	<u>Identifier code for record in ISSUES data</u> base which specifies this agency as respon-
SYMBOL	CHAR	12	sible for issue resolution.  Military office symbol.
COMMAND	CHAR	20	The name of the Command of point of contact.
STATION	CHAR	20	The military location of point of contact.
CITY	CHAR	20	The city of POC, if relevant.
STATE	CHAR	2	State abbreviation.
ZIP	CHAR	10	Code to ten-digit zip code if one exists.
POCNAME	CHAR	30	Title and full name of Point of Contact.
AREA_CD	CHAR	3	Commercial telephone area code.
TELNO	CHAR	8	Commercial telephone number.
AVNO	CHAR	8	Autovon telephone number.

# Data Collection and Data Entry

Entries to the data bases are from data collection forms that are arranged in the same format as the on-screen data entry screens. Data collection forms should be utilized by analysts. Actual entry to the data base should be done by data entry personnel.

LHX Document Data Base

Record Format		
(Prepared by:	Date:	)
Identification number: (IDNO)		
Document (TITLE)		title:
Originating organization: (ORIG_ORG)		
Author: (AUTHOR)	···.	
Date of publication: (DATE: MM/DD/YY)		
Where document may be found: (LOCATE:)		
Date of expected document availability: (WHENEXP:)		
Is the document pertinent to ASARC issues? (PERT:)(y,	/n/unk)	
Media of publication: (MEDIA:P,U,V,S)		
Status of the document: (STATUS: D,FD,F,U)		
Security classification of document (SECLAS: <u>*)</u>		
Type of document: (TYPE: M, TR, RPT, OTHER)		

<sup>\*</sup> SECLAS CODES: S, SECRET; SRC, SECRET RESTRICTED DATA; SFRD, SECRET FORMERLY RESTRICTED DATA; ST, SECRET TENTATIVE; C, CONFIDENTIAL; CRD, CONFIDENTIAL RESTRICTED DATA; CFRD, CONFIDENTIAL FORMERLY RESTRICTED DATA; CT, CONFIDENTIAL TENTATIVE; U, UNCLASSIFIED; R, FOREIGN RESTRICTED.

# LHX ISSUES Data Base Record Format

(Prepared by:	Date: )
Issue Identification Code: (ISSU_CD:)	*******************
Short phrase to identify issue type: (ISSUTYP : s predefined ISSUTYPs)	ee appendix for listing of
Relative criticality score: (CRITSCR: L,M,H,E)	
Statement of Issue: (ISSUE:)	
Statement of Issue for memo field: (ISSUEM:) <u>(sa</u>	me as for ISSUE:)
Document or reference that supports conclusion an i	tem is an issue: (CONSUP:)
Code to reveal the current status of the issue: (ST	ATUSCD: )
Statement of the proposed solution, if any: (PROPSO	
Impact of the issue: (IMPACT:)	
Agency responsible: (AGNCY_CD)	
Agency responsible for issue resolution: (RESPAGENC	Y:)
Type of issue: (TYPECD:)_	
Document IDNO: (IDNO:)	
Page in source document: (REFCD:)	
RELATED ISSUES: (RELATE- I,U,A,F)	
At what event must the issue be resolved? (WHENRES:	)
Source of solution of Issue: (SOLUSRS:)	
Risk if issue not resolved: (RISK:)	
System MANPRINT Management Plan question number: (M Critical Question: (CRITQUEST:) Critical Question Number: (CQNO:)	

# SAMPLE LHX DOCUMENT Data Base Record Format

(Prepared by: JB	<u>Date: 3/2/86 )</u>
Identification number: (IDNO) A1022	
Document title: (TITLE) PROJECTED ACCIDENT COSTS FOR THE MATION MEMORANDUM	LHX AIRCRAFTINFOR-
Originating organization: (ORIG_ORG) PESC-SE	
Author: (AUTHOR) LT. GEN ROBERT M. ELTON, DCSPER	
Date of publication: (DATE: MM/DD/YY) 12/23/84	
Where document may be found: (LOCATE:) 040 ARI LHX FILE	FOLDER (ALLEN)
Date of expected document availability: (WHENEXP:)	
Is the document pertinent to ASARC issues? (PERT:)(y/n/u	nk) <u>Y</u>
Media of publication: (MEDIA:P,U,V,S) P	
Status of the document: (STATUS: D,FD,F,U)_F	
Security classification of document: (SECLAS*:) Uncl	
Type of document: (TYPE: M, TR, RPT, OTHER) MEMO	

<sup>\*</sup> SECLAS CODES: S, SECRET; SRC, SECRET RESTRICTED DATA; SFRD, SECRET FORMERLY RESTRICTED DATA; ST, SECRET TENTATIVE; C, CONFIDENTIAL; CRD, CONFIDENTIAL RESTRICTED DATA; CFRD, CONFIDENTIAL FORMERLY RESTRICTED DATA; CT, CONFIDENTIAL TENTATIVE; U, UNCLASSIFIED; R, FOREIGN RESTRICTED.

# SAMPLE LHX ISSUES Data Base Record Format

# LHX AGENCY Data Base Record Format

(Prepared by:	<u>Date:</u> )
	=======================================
Agency record number (AGNO)	
Agency code (AGNCY_CD)	
Document identification (IDNO:)	
Issue code (ISSUE_CD)	
Office symbol (SYMBOL)	
Command of point of contact (POC) (COMMAND)	
Military Installation of POC (STATION)	
City where POC is located (CITY)	
State where POC is located (STATE)	
ZIP code for mailing (ZIP)	
Title and name of POC (POCNAME:)	<del></del>
Commercial telephone area code (AREA_CD)	
Commercial telephone number (TELNO)	
Autovon telephone number (AVNO)	

# SAMPLE LHX AGENCY Data Base Record Format

(Prepared by: RCI	Date: 3/1//86)
Agency record number (AGNO) G1034	:======================================
Agency code (AGNCY_CD) P1001	
Document identification (IDNO:) R1002	
Issue code (ISSUE_CD)	
Office symbol (SYMBOL) AMCPM-LHX	
Command of point of contact (POC) (COMMAND) AMC	
Military installation of point of contact (STATION) <u>AVSCOM</u>	
City where POC is located (CITY) ST. LOUIS	
State where POC is located (STATE) $\underline{\text{MO}}$	
ZIP code for mailing (ZIP) 63120-1798	
Title and name of POC (POC) <u>LTC TURNER</u>	
Commercial telephone area code (AREA_CD) 314	
Commercial telephone number (TELNO) <u>263-1327</u>	
Autovon telephone number (AVNO) 693-1327	

#### **GLOSSARY**

Because of space limitations of printouts, certain abbreviations were developed either for use as headers or within text. This alphabetized listing defines those abbreviations:

Army Materiel Command AMC Analysis Documents Data Base ANLDOC Report format to list ANLDOC contents ANLDOK **AUCP** Automated Cockpit AUTO Automated CDCRITYP Index file indexing ISSUEI on TYPECD, CRITSCR, and ISSUTYP CONTIN'S Continuous CONTR. Contractor CP Cockpit DEL Delivery Ε Essential (no system if issue not resolved) ENV Environment High (system seriously degraded if issue remains) Н HF Human Factors HFEA Human Factors Engineering Assessment НН Health hazards INST Instructor INT Integrated ISSUEI Issues data base version 'I' Report form to list non-memo fields in ISSUEI ISREP-S Low (not zero. Might work around issue) LVL Level Line Replaceable Unit LRU Medium (criticality is between H and L) М MAINT Maintenance MANPWR Manpower **MMPQNO** MANPRINT Management Plan Question Number MULTI-MI Multi-mission OPN Operation Plans and Programs Documents Data Base PLNDOC PLNDOK Report format name to list PLNDOC contents Program Manager PM Report form to list AGENCY data base contents POCS Requirements Documents Data Base REQDOC Report format name to list REQDOC contents REODOK SCAT Scout Attack TECH Technology TNG Training TOA Trade-off analysis TRADOC Training and Doctrine Command TSM TRADOC system manager

# APPENDIX B

LHX MANPRINT INFORMATION IN SPECIAL FORMAT PRESCRIBED BY U.S. ARMY RESEARCH INSTITUTE

#### APPENDIX B

# LHX MANPKINT INFORMATION IN SPECIAL FORMAT PRESCRIBED BY U.S. ARMY RESEARCH INSTITUTE

#### IV. MANPRINT Issues/Concerns

#### A. Human Performance

#### 1. Crew size

- (a) Total system performance requirement: The SCAT will have a crew of one. (There are indications that a second crew member may be added.) The Utility, while operable by a single pilot, will have provision for a second crew member. The total system requirement will ome from the HARDMAN analysis which already includes consideration of a second crew member in the SCAT.
- (b) Human performance standards: These have not yet been separately codified from the system performance specifications. The latter are replete with implications for specific human performance having impact on skill requirements, training, and the soldier machine interface. The LHX Request for Proposal (RFP) Section 3.1.1 addresses soldier performance.
- (c) Human error analysis: The RFP contains numerous requirements for surveys, analyses, demonstrations, simulations, tests, and validations involving human performance. It does not contain a specific requirement for human error analysis.
- (d) Operator (pilot) workload: The Advanced Rotocraft Technology Integration (ARTI) program was to provide information on this topic. Results from the ARTI program are not available to the writer. Other analyses indicate that successful mission accomplishment by a single pilot SCAT is highly problematical especially under adverse weather, at night, and under degraded equipment conditions. The RFP Section 3.3.2.1 addresses pilot workload measurement.

- (e) National Guard, Army Reserve Issues: No comment.
- 2. Maintenance/maintainer, civilian maintainer, supporter
  - (a) Total system performance requirement: Will come from HARDMAN analysis.
  - (b) Human performance standards: Not defined in documents reviewed by Allen Corporation.
  - (c) Human error analysis: No requirement in RFP.
  - (d) Impact of degraded built-in automated diagnostic equipment: Awareness of the potential problem is indicated in some documents. Measures to reduce potential impact are not evident in documents reviewed.
  - (e) National Guard, Army Reserve Issues: No comment.
- 3. Environmental impacts on human performance and impact on designs. Address impact for active components and Army Reserve and National Guard. Do not duplicate information found elsewhere in this outline.
  - (a) Physical environment: LHX is expected to operate throughout worldwide extremes of climate, weather, and other environmental factors. Environmental conditions are specified in RFP Section 2.3.2.10. Conditions covered are: temperatures, rain, snow load, sand and dust, icing conditions, salt spray, fungus, shock, and vibration. LHX is required to operate from 12-degree slope (RFP Section 2.3.2.1.3.4) and from shipboard in sea state 2 (RFP Section 2.3.2.1.3.5).
  - (b) Operational environment: Under many flight and mission regimes, single SCAT pilot will be subjected to extremely high workloads. In some cases, e.g., night and adverse weather, workloads may exceed the capabilities of the best pilots. If a decision is made to add a second crewmember to SCAT, then LHX performance is more likely to be limited by equipment performance than by human performance. The internal environmental control system is specified in RFP Section 2.3.2.5.6. ventilation, defogging, and defrosting are provided for both SCAT and Utility. Cooling is provided for SCAT only. Oxygen and electricity are provided for med-evac patients. The potential threat exposure and protection required for LHX and crew are covered in RFP section 2.3.2.11. Noise limits are established by reference in RFP Section 2.3.2.16.5.

Maintenance and support personnel are expected to perform under environmental extremes and NBC conditions with protective clothing and/or NBC (MOPP level IV). (RFP Section 2.3.2.6.9). Auxiliary lighting is to be provided for flight line maintenance (RFP Section 2.3.2.7.2.1).

- (c) Social environment: No comment.
- B. Other MANPRINT Integration Issues: Not covered above or below: In general, MANPRINT issues appropriate to the RFP are well covered in the RFP. That document contains numerous requirements for analyses, surveys, mock-ups, simulations, demonstrations, and tests that include the "soldier-in-the-loop." The final success of the overall LHX hardware/soldier integration will be determined by the attention and weight given to MANPRINT concerns during the course of LHX development.

# V. Specific MANPRINT Domain Issues

- A. Manpower (Military and Civilians). The Extended HARDMAN Analysis conducted by Dynamics Research Corporation provided the following summary findings in a briefing at Fort Rucker, 7-8 October 1986:
  - 1. 53% reduction in maintenance burden for LHX compared to predecessor system.
  - 2. 53% reduction in maintenance manpower.
  - 3. Shortfalls in MOS 66J, 68D, 68H, 68M, and 68F upon introduction of LHX.
  - 4. 40% less MPT requirements for LHX than for predecessor systems.
- B. Personnel (Military and Civilians). The HARDMAN analysis in paragraph A above addressed active Army military. The analysis was in progress for reserve components. National Guard and civilians were not mentioned. MOS consolidation is covered in the analysis as are shortfalls in specific MOS (A, 3) above. The analysis is based on postulated peacetime flying hours and does not include mobilization and wartime flying hours.
- C. Training (Military and Civilians)
  - 1. Training strategy: HARDMAN analysis (Paragraph A. above) uses traditional Army school strategy in estimating training manpower and personnel requirements. RFP Section 3.5 requires a System Approach to Training (SAT) and includes more than five pages specifying the training program required of the contractor. While the training strategy is not explicitly stated, items included and omitted in RFP Section 3.5 would support an inference that all training, including courseware materials and devices, for all personnel (operational.

maintenance, and support) is to be prepared by the contractor as an integrated training system (ITS) subject to government approval. The exceptions appear to be tactics and doctrine training and collective training limited to simulation. The words "Contractor Delivered" and "Turn Key" do not appear. Also, while the contractor is to prepare the training, it would appear that the Army will conduct the institutional and non-institutional training.

- Training concept: (See paragraph C.1 above). RFP Section 3.5.3.4 addresses Embedded Training. The RFP contains no requirement for a two-pilot SCAT trainer. A New Equipment Training Program has been drafted for LHX but no New Equipment Training Team is planned for LHX. (Also see paragraph on Training under Light Helicopter System Description in main body of this report.)
- 3. The 29 training issues examined in this analysis are summarized in Tables 2 through 4 in the main body of this report and are listed in the data base print-outs in Appendix  $\Delta$

## D. Human Factors Engineering

- 1. Operator interface design/operator performance concerns: Table 1 in the main body of this report lists 19 issues judged to be the most critical to LHX issues. All of these are operator interface or operator performance issues. The complete list of LHX MANPRINT issues (Appendix A) repeats these 19 and lists 26 additional issues of lesser importance. See also Tables 2 through 4 of the main body of this report.
- 2. Maintainer interface design/maintainer performance concerns: Table 4, main body of this report, shows 12 issues in this category. See the issue lists in Appendix A for details on these as well as three issues affecting support personnel.
- 3. System integration and interraction interface design concerns. (See D.1 above).
- E. System Safety. This domain was not part of this analytic effort. However, as noted elsewhere in this report, some of the issues included here under human factors engineering and health hazards might be construed as system safety issues.
- F. Health Hazards. This analysis cataloged seven issues in this domain. (See Tables 2 through 4 and Appendix A.) Other analysts might categorize some of the human factors engineering issues as health hazard issues.